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FOOD PRODUCTION BLUEPRINT

Has Complex Specifications

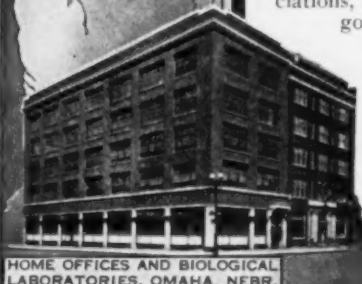
Not slighting the great gifts of science to agriculture, the specifications of food production are largely the directives for maintaining the health of farm animals—the animals which convert *feed* to *food*, roughage and concentrates into meat and milk and eggs.

* * * *

The specifications comprise patterns for veterinary education, for a vast system of production laboratories, for experienced practitioners and livestock sanitarians, for agricultural experiment stations, for a scientific literature, for active associations, and for federal and state laws and regulations to govern their operation.

THE BLUEPRINT OF FOOD PRODUCTION AND ITS SPECIFICATIONS, SELDOM STUDIED IN TIMES OF PEACE, HAVE BEEN FOUND TO SCORE HIGH ON CLOSE INSPECTION IN TIMES OF EMERGENCY—

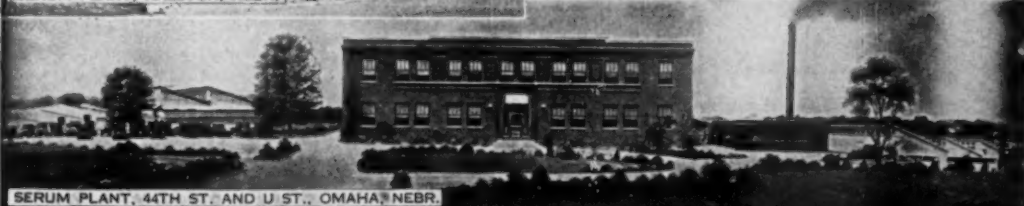
IT'S THE BLUEPRINT OF THE VETERINARY PROFESSION.



HOME OFFICES AND BIOLOGICAL LABORATORIES, OMAHA, NEBR.



SERUM PLANT, RALSTON, NEBR.



SERUM PLANT, 44TH ST. AND U ST., OMAHA, NEBR.

The **Corn States Serum Co.**
Omaha, Nebraska

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NO. 807

The Equine Thyroid in Health and Disease

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Lexington, Kentucky

MICROSCOPIC sections of the thyroid gland from 59 adult horses and equine fetuses, chiefly Thoroughbreds, have been available for study. The thyroid glands were collected from adult horses, fetuses, and young foals which were presented to the department of animal pathology for postmortem and bacteriological examination.

THE NORMAL THYROID GLAND

The thyroid gland in the horse consists of two oval-shaped lateral lobes connected by a narrow isthmus (Sisson⁴). It is a vascular endocrine gland, firm in texture and of brownish purple color. The superficial surface is convex while the deep surface is flattened or concave to conform to the trachea, to which it is loosely attached near the larynx. The lobes which are not always symmetrical are somewhat variable in size and position. The gland is covered by a thin fibroelastic capsule of connective tissue. Connective tissue trabeculae fan from the capsule into the body of the gland. The glandular tissue consists of lobules which are embedded in a stroma of fibrous connective tissue which contains numerous blood vessels, lymphatics, and nerves. Each lobule is made up of noncommunicating follicles or acini.

Microscopically, the normal thyroid is one which has a moderate amount of connective tissue stroma through which course

numerous small vessels and nerves. The follicles are variable in size but are more or less regular in outline and have a tendency to assume a spherical shape. The epithelium consists of either cuboidal or low columnar cells depending upon the state of activity of the gland. In very active glands, the trend is toward the columnar epithelium, and the gland becomes more vascular as activity increases. The colloid is homogenous and deeply acidophilic in staining reaction. The significance of vacuoles in the colloid has not been determined. These are often seen in otherwise perfectly normal thyroid glands.

The thyroid gland of the foal is similar to that of the adult horse except that it is larger in proportion to the body weight, the isthmus is larger in proportion to the gland, and the follicles are smaller.

In an advanced state of hyperplasia, there is a marked increase of stroma; vascularity is also increased. The follicles are irregular in outline with tufting or folding. There is a complete absence of colloid, and the epithelium is of a high columnar type.

In a colloid gland, the stroma and vascularity are decreased, and the follicles are variable in size, some being exceedingly large. All are distended with acidophilic staining colloid, and the epithelium is flattened.

REVIEW OF LITERATURE

Disease of the thyroid gland of the horse has received mention in some of the older literature. Schlotthauer¹ lists some of the earlier

The investigation reported in this paper is in connection with a project of the Kentucky Agricultural Experiment Station and is published by permission of the director.

references to disease of this gland, particularly in textbooks. One case is mentioned in which a colter weighed 4 lb. Pressure from an enlarged thyroid gland is reported to have caused asphyxia in another case. Difficult deglutition and dyspnea have been reported as being caused by enlarged thyroid glands. These

the thyroid, about 10 cm. in diameter, was described as being successfully removed.

More recently, a gross and microscopic study of the thyroid glands of 100 adult horses has been made by Schlotthauer.¹ He divided them into four groups, as follows: (1) normal, 34 per cent; (2) hyperplastic, 20 per cent; (3) colloid, 9 per cent; and (4) adenomatous, 37 per cent. Apparently, sex had no relation to either gross or histologic structure. Age was said to be a factor, in that no adenoma was found in horses under 10 years of age. Forty per cent of the animals with adenomatous glands were in poor condition.

Abbott and Prendergast² studied, histologically, the thyroid glands of 60 adult horses and other animals produced in western Canada. Among the thyroids, they found 58.3 per cent normal, 13.3 per cent hyperplastic, and 28.3 per cent colloid goiters. None were adenomatous.

Tagliavina,³ in discussing the thyroid gland in periodic ophthalmia, stated that the gland weighed more than in normal horses. It had a somewhat damper surface and had a spotted appearance. The follicular epithelium was markedly flattened, and the vascularity was decreased. The colloid was compact and basophilic, showing numerous granular accumulations covered more or less with pigment. Glands from horses suffering from periodic ophthalmia presented a definite picture of morphological changes of the follicles, the follicular epithelium, and the staining qualities of the colloid.

METHOD

The glands were removed from the horse during the postmortem examination, carefully weighed, and then fixed in 10 per cent formalin. The weight of the horse was previously determined. From their weights, the ratio of the weight of the gland in grams per kilogram of body weight was determined. The sections were

TABLE 1.—The Age, Sex, Breed and Groups of Horses from Which Thyroids Were Studied

	F.	P. O.	I. (W.)	G. D.
Premature to 6 days	26			26
Weanlings			2	2
1 to 2 years		1	12	4
3 to 5 years		1	1	2
6 to 10 years				1
11 to 15 years				1
16 to 20 years				
21 to 30 years		2		2
Age unknown				4
Sex				
Male	14	1	8	3
Female	11	2	5	7
Gelding		1	2	1
Unknown	1			3
Breed				
Thoroughbred	23	1	12	5
Standard bred	1	2		1
Saddle bred	1	1	2	2
Draft			1	1
Mule				2
Unknown	1	1		3

F. = foals; P. O. = periodic ophthalmia; I. (W.) = incoordination (wobbles); G. D. = general diagnosis; T. = total.

animals manifested such symptoms as weakness, palpitation, rapid pulse, enlargement of the thyroid gland, and exophthalmia. Carcinoma, with metastasis to the lungs, and sarcoma, which spread over the entire larynx within 18 months, have been described as originating from the thyroid gland of the horse. Adenoma was also mentioned in the older literature. An adenomatous left lobe of

TABLE 2.—Relation of the Weight of the Thyroid to the Body Weight

		FOALS	PERIODIC OPHTHAL- MIA	INCOORDINA- TION (WOBBLES)	GENERAL DIAGNOSIS
Body weight kilograms	Average	38.75	374.95	320.99	378.13
	Extremes	10.45 to 60.45	363.6 to 386.3	240.9 to 500.0	215.9 to 545.45
Weight of the thyroid glands grams	Right { Average	5.41	9.70	12.21	14.58
	Extremes	1.1 to 15.0	8.0 to 12.4	4.91 to 21.0	5.3 to 41.0
	Left { Average	5.51	7.40	12.56	16.11
	Extremes	1.0 to 18.3	7.0 to 11.3	4.9 to 23.4	4.9 to 42.3
	Both { Average	10.92	18.46	23.60	30.15
	glands { Extremes	2.35 to 38.60	15.7 to 23.7	10.70 to 44.40	10.3 to 83.3
Grams of thyroid per kilogram of body weight (averages)	Right	0.1396	0.0261	0.0377	0.0388
	Left	0.1422	0.0267	0.0391	0.0409
	Both glands	0.2815	0.0528	0.0764	0.0806
Grams of thyroid per kilogram of body weights (extremes)	Right	0.0560— 0.2729	0.0181— 0.0341	0.0121— 0.0871	0.0211— 0.0751
	Left	0.0440— 0.03027	0.0225— 0.0310	0.0129— 0.0971	0.0215— 0.0775
	Both glands	0.1162— 0.5678	0.0406— 0.0651	0.0261— 0.1842	0.0426— 0.1527

stained with hematoxylin and eosin. Each section was systematically studied, particular attention being given to the quantity of connective tissue stroma present, the vascularity of the gland, the size and regularity of the outline of the follicles, the color and amount of the colloid present, the presence of vacuoles in the colloid, and the type of epithelium lining the follicles.

DISCUSSION

The thyroid glands were divided into four groups as follows: glands from (1) horses with periodic ophthalmia, (2) horses affected with incoördination (wobbles), (3) horses affected with conditions other than periodic ophthalmia and incoördination, and (4) foals and fetuses. The age, sex, and breed of horses in the different groups are shown in table 1.

Periodic Ophthalmia.—The thyroid glands from four horses affected with periodic ophthalmia were studied. The age and sex of these animals were: one 1-year-old colt, one 5-year-old gelding, and two mares 28 and 29 years of age. As the autopsies on this group were made during the winter months, there was no seasonal variation. The stroma was increased in all except the 5-year-old gelding. The vascularity was the same in all of these cases. The follicles were of normal variation in size in the 5-year-old, and irregular in outline in the others. The colloid was acidophilic staining in all animals being somewhat degenerated in 1 of the aged mares. The average weight of 3 of these glands was 18.46 Gm. the fourth gland was not weighed. They ranged in weight from 15.7 Gm. to 23.7 Gm. which amounted to 0.0406 to 0.0651 Gm. of thyroid per kilogram of body weight, averaging 0.0528 Gm. per kilogram. The epithelium was cuboidal in all cases. The gland of the 5-year-old gelding was normal, the other 3 were hyperplastic.

Incoördination (Wobbles).—The glands from 15 horses with symptoms of incoördination were studied. Of these, 2 were weanlings, 9 were yearlings, 3 were 2-year-olds, and 1 was 3 years old. Ten were males (2 geldings) and 5 were females. All were destroyed in the same manner.

The average weight of the horses in this group was 321 kg. The average weight of the thyroid gland in this group was 23.60 Gm. The ratio of the grams of thyroid to each kilogram of body weight ranged from

0.0261 to 0.1842, the average being 0.0764. The amount of stroma present was interpreted as normal in 11 glands; 2 contained more than normal, and in 2 it was decreased. Vascularity was normal in 10, decreased in 1, and increased in 4 glands. The follicles were fairly uniform in 5 glands, variable in 5, and irregular in outline in 5. The amount of colloid present

TABLE 3—Histological Characteristics of the Thyroid Glands

		F.	P.	O.	I. (W.)	G.	D.	T.
Stroma	Normal	19	1	11	11	11	42	
	Less than normal	0	0	2	0	2		
	More than normal	7	3	2	3	15		
Vascularity	Normal	17	4	10	9	40		
	Decreased	0	0	1	0	1		
	Increased	9	0	4	5	18		
Follicles	Uniform	17	0	5	4	26		
	Variable	2	1	5	8	16		
	Irregular	5	3	5	2	15		
	Incomplete	2	0	0	0	2		
Amount	Normal	18	1	11	4	34		
	Decreased	8	3	2	8	21		
	Increased	0	0	2	2	4		
Colloid	Red	19	4	10	11	44		
	Pale or absent	7	0	5	3	15		
	None	9	2	4	6	21		
Vacuoles	Few	12	2	4	3	21		
	Many	5	0	7	5	17		
Epithelium	Cuboidal	23	4	9	8	44		
	Columnar	3	0	3	4	10		
	Flat	0	0	3	2	5		
State of gland	Normal	16	1	7	3	27		
	Hyperplastic	2	3	6	9	20		
	Colloid	8	0	2	2	4		

F. = foals; P. O. = periodic ophthalmia; I. (W.) = incoördination (wobbles); G. D. = general diagnosis; T. = total.

was normal in 11 glands, decreased in 2, and increased in 2. Ten glands contained acidophilic staining colloid, while it was pale or apparently absent in 5. Four contained no vacuoles; 4 contained a few vacuoles; and 7 contained many. The epithelium was cuboidal in 9 glands, columnar in 3, and flat in 3. The glands were normal in 7, hyperplastic in 6, and colloid in 2 cases.

General Diagnosis.—The age, sex, breed, and weight of the 14 horses in this group are shown in table 1. The average weight of the thyroid gland was 30.15 Gm. or 0.0806 Gm. of thyroid per kilogram of body weight. This ratio varied from 0.0426 to 0.1527 Gm. per kilogram of body weight for

this group. The stroma was normal in amount in 11 glands, and increased in 3. Vascularity was normal in 9 and increased in 5 glands. Follicles were fairly uniform in 4, variable in 8, and irregular in outline in 2 cases. The amount of colloid was normal in 4, decreased in 8, and increased in 2 glands. Eleven glands contained acidophilic staining colloid, while in 3 the colloid was pale staining or apparently absent. Six contained no vacuoles; 3 contained few; and 5 contained many. The epithelium was cuboidal in 8 glands, columnar in 4 and flattened in 3. On the basis of the above interpretation, this group contained 3 normal glands, 9 hyperplastic, and 2 colloid glands.

Foals and Fetuses.—In this group, there were 26 animals consisting of: aborted fetuses, stillborn foals, and foals dying during the first few days after delivery. Many were affected with streptococci, navel-ill, *Bacterium viscosum equi*, virus abortion, and twin abortion. These animals varied from 3 months premature to 6 days of age. The average weight of the thyroid gland was 10.92 Gm., or 0.2815 Gm. per kilogram of body weight, with a variation from 0.1162 to 0.5678 Gm. It is seen from these figures that the thyroid gland of the foal is much larger in proportion to body weight than in the adult horse. The amount of stroma in 19 glands was normal, and increased in 7. Vascularity was normal in 17

and increased in 9. The follicles were fairly uniform in 17 glands, variable in 2, irregular in outline in 5, and incompletely formed in 2. The amount of colloid was normal in 18 glands and decreased in 8. The colloid was acidophilic in 19 and pale or apparently absent in 7 glands. Nine glands contained no vacuoles, 12 contained few, and 5 contained many. The epithelium was cuboidal in 23 glands and columnar in 3. Sixteen glands were classed as normal, 2 as hyperplastic, 7 as immature, and 1 as hemorrhagic.

Table 4 shows a summary of the weights of 142 horses and their thyroid glands. The animals were divided into 6 groups according to age. Since the material was derived from animals which were brought to the laboratory for postmortem examination, a planned grouping of the ages could not be made. The grouping was made as nearly as possible according to age of the material available, thus: the weight of the thyroid in relation to body weight could be shown as accurately as the available material permitted. Weights are given as averages for the thyroids and horses in each group. The extremes in body weight and weight of thyroid are shown. The average weight of the right and left lobes was quite uniform; however, the left lobe was slightly larger in all except group 3. The ratio of weight of thyroid to body weight in grams per kilo-

TABLE 4—Summary of Weights of Horses and Thyroids from Different Age Groups

		GROUP 1	GROUP 2	GROUP 3	GROUP 4	GROUP 5	GROUP 6
Age		5 months premature to 2 weeks premature	At term to 15 days	25 days to 7 months	9 months to yearlings*	2 to 7 years	15 to 33 years
Number		37	41	13	22	13	16
Weight (Ky) range		10.0-63.0	25.0-74.54	70.91-181.2	215.9-447.7	384.1-488.6	290.0-500.0
Average Weight (Ky)		33.16	53.0	140.05	311.80	434.83	404.60
Weight of thyroid							
	R.	1.10-23.20	2.6-19.2	5.1-21.0	4.95-21.15	9.7-18.85	6.20-21.5
in grams	L.	1.10-19.80	2.4-19.7	4.9-23.4	4.9-23.1	9.1-19.90	7.0-23.2
Extremes	Both	2.10-34.50	5.8-33.3	10.8-44.4	10.7-41.85	18.71-38.50	13.43-44.7
Weight of thyroid							
	R.	6.63	8.05	10.37	11.50	14.23	11.20
in grams	L.	6.65	8.13	10.09	12.70	15.63	12.83
Averages	Both	15.13	16.18	20.46	24.65	30.03	24.02
Grams of thyroid							
	R.	0.1969	0.1519	0.0740	0.0368	0.0327	0.0249
per kilogram	L.	0.2005	0.1537	0.0778	0.0410	0.0357	0.0317
of body weight	Both	0.3960	0.3052	0.1460	0.0790	0.0690	0.0593

*Includes animals up to 2 years of age.
R. = right; L. = left.

gram was largest in the fetuses and became progressively smaller as the age increased.

SUMMARY

A total of 59 thyroid glands was studied. Of this number, 42 had a normal amount of stroma. The stroma was decreased in 2 and increased in 15 of the glands. The vascularity was normal in 40 glands, decreased in 1 and increased in 18. The follicles were fairly uniform in 26, variable in 16, irregular in outline in 15, and incompletely formed in 2. The amount of colloid present was normal in 34 glands, decreased in 21, and increased in 4. Forty-four glands contained acidophilic colloid. In 15, the colloid was pale staining or apparently absent. The epithelium was cuboidal in 44, columnar in 10, and flattened in 5 glands. A total of 27 (45.7%) glands were classified as normal, 20 (33.9%) as hyperplastic, and 4 (6.7%) as colloid. One gland contained a circumscribed adenoma. This was from an aged mare.

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The Current Brooding Situation

According to a bulletin (April 26, 1944) of the National Poultry Advisory Council, a special survey made by the Bureau of Agricultural Economics from April 1-15, 1944, revealed the following information on chicken brooding.

- 1) Number of eggs set April 1-15, 1944, in comparison with 1943—87 per cent.
- 2) Number of chicks hatched April 1-15, 1944, in comparison with 1943—96 per cent.
- 3) Cancellations for period from April 1-15, 1944—10 per cent.
- 4) Hatcherymen reported that output of chicks during April and May would be only about 2/3 of the output during April and May of last year. If this decrease occurs, production of chicks for the first five months of this year would be 18 per cent less than during the record high output of the corresponding period of 1943. The actual output during April and May may turn out to be larger or smaller than the report indicates, due to price changes, agricultural programs, and the effect the current situation may have on hatcherymen's and poultry producers' plans.

On April 15 the nation's brooder houses contained only 2 per cent less chicks than on the same date in 1943.

The survey included 84 per cent of the hatchery capacity of the nation, taken from the 28 leading poultry states.

Our Far-Flung Food Inspection



—Source and place unidentified by request

Wherever the Army goes, veterinary officers are on hand to supervise the slaughtering of animals providing meat for our troops. This picture, taken in India, of a slaughterhouse, is operated under the sanitary inspection of the Veterinary Corps. In other theaters, dairy cattle are inspected for tuberculosis, brucellosis, and mastitis, in the determination to control the incidence of food-borne diseases among the troops.

Veterinary Corps in the Mojave Desert

CAPTAIN R. W. MENGES, V.C., U. S. ARMY

FOR THE PAST six months, I have been the railhead veterinarian at a railhead in the Mojave Desert, California. Under this set-up, the veterinarian works with a quartermaster railhead company. The railhead company unloads and issues the rations to

truck must have a canvas top, and a front and back canvas drop. Out here where it is so sandy and dusty, the canvas inclosure aids in keeping the food clean. The final step is to check the actual handling of the food. For example, unwrapped bread is sometimes put on the floor of the truck. The unit should be notified to bring a box for the bread, or the railhead personnel should put the bread in bags. The veterinarian should see that the food is issued in a sanitary manner.



Fig. 1—Truck Inspection.

troops, and the veterinarian inspects the rations and checks on sanitary conditions. The inspection of the rations takes only a short time, since most of the food comes in cans. The sanitary problems, however, keep the veterinarian busy in the field.

Among the sanitary problems that arise, the veterinarian is interested in those that deal with the handling of food. To start with, the veterinarian sees that the rations are unloaded from the box cars and placed on canvas tarpaulins, not directly on the ground. The next step is to check the trucks. Each truck must be clean, free from oil, grease, or garbage, etc., and must be entirely inclosed by canvas; that is, the

This article was written in August, 1943, at a small railroad siding called "Freda" in the Mojave Desert, California. At that time, the entire area was called the "Desert Trainings Center". It is now known as the "California-Arizona Maneuver Area."

Published with the approval of the War Department.



Fig. 2—The railhead company unloads the rations prior to issue.

After the rations have been issued, the breakdown area must be cleaned of all paper and refuse. The box cars are also cleaned by the railhead personnel. The sanitation around the breakdown area is the responsibility of the veterinarian. A good railhead company will clean up soon after the food has been issued.

Besides the regular issue, a railhead usually keeps an emergency stock of canned foods in a warehouse which the veterinarian checks frequently. The warehouse should be kept clean and free from flies.

Within walking distance of the ware-

house and near the breakdown area there should be a latrine for the personnel handling the rations. It is a good policy to check the latrine occasionally and see that the railhead personnel keeps it clean. It should be scrubbed daily, and oil, water, and lime put into the pit when needed. Flies can be controlled by the use of a fly-trap over one of the seats, and by using fly ribbon or fly paper. Since the personnel will be handling food after visiting the latrine, it is necessary that some means

actual inspection of the food. In the field, the veterinarian is expected to check all foods, not only meat and dairy products. We record on form 110 only meat and dairy products, and do chiefly a class 7 inspection (issue or sale). The inspection consists of opening several cases of each item and looking for leakers or swellers. During a recent maneuver, we inspected over 700,000 lb. of meat and dairy products and our total pounds rejected were less than 300. Two products were rejected: evaporated milk (canned) and pork sausage links (canned). Leakers are quite commonly found in cases of evaporated milk, due to rough handling.

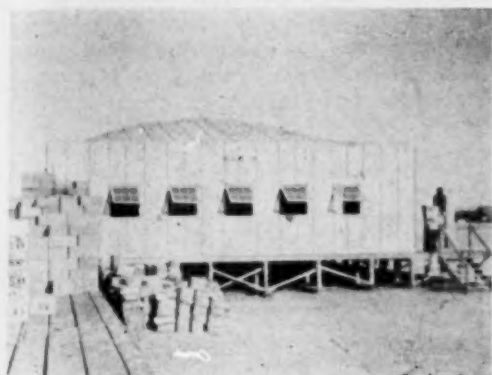


Fig. 3—The railhead warehouse should be kept clean and free from flies.

for washing hands is nearby. A hand-washing stand is usually used which consists of a "T" with two large cans hanging from it. One can should contain soapy water, the other chlorine solution, and these solutions should be changed daily. To prevent everyone from dipping their hands into the cans, a sign, "Tip Don't Dip", is usually placed on top of the stand. At a new railhead, a veterinarian can be helpful to the railhead officer by pointing out these sanitary devices.

One other job the veterinarian can do is to examine the Lister bag. Water is important in the desert and is consumed in large quantities. Faulty water would cause just as much trouble as faulty food. The Lister bag should be cleaned frequently to remove a slime that collects on the inside, and also the sand particles that accumulate at the bottom. When ice is added to the water, I usually have the mess sergeant add more chlorine because the ice is far from clean. The Lister bag is hung in a canvas inclosure, and a rock drainage pit is dug just below the bag.

The main job of the veterinarian is the

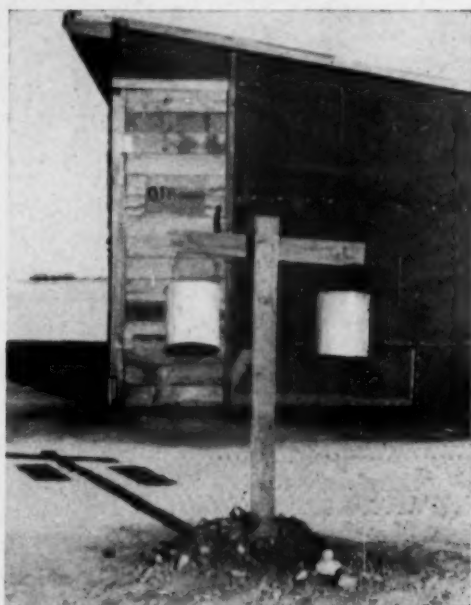


Fig. 4—Latrine and hand-washing stand.

The pork sausage was actually spoiled, and we found swellers, leakers, and serious seam dents. We received some moldy bacon, but it was still in good condition. The products other than meat and dairy products which we rejected consisted of bread, fresh orange juice, and potatoes. The bread was rejected due to mold. The orange juice was sour, and gas had developed to a pressure where the tops were blowing out. Fresh orange juice is a highly perishable product, and must be kept cool, similar to the temperature of milk. The heat in the desert evidently causes fermentation to occur more rapidly. A day after receiving a shipment of orange juice, it begins to get tart and stings the tongue

when tasted. Some of the potatoes we received were rotten, but as a rule they came in sound.

During the entire period in the desert, we have been on various diets. The best diet is the "A" ration which is a fresh-food diet. With this ration, the veteri-

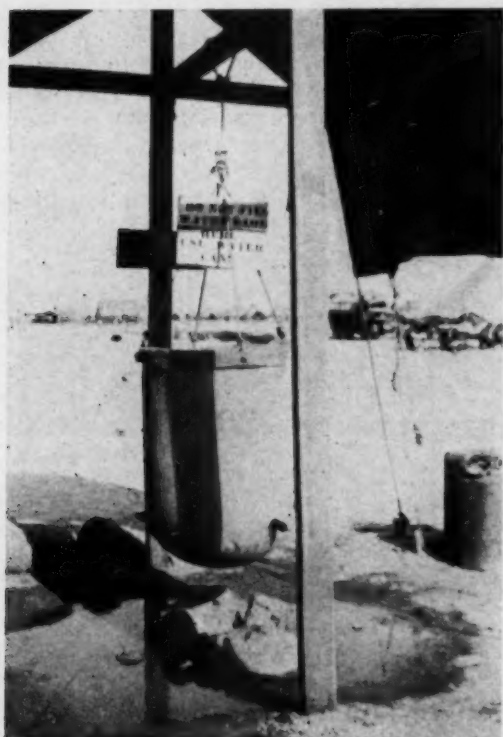


Fig. 5—The Lister bag. A water pool below the bag is undesirable. A deeper drainage pit is necessary here.

narian will inspect frozen beef, frozen lamb, or frozen pork, fresh sausage, fresh milk, cheese, etc. Those products come into the desert in refrigerator cars which are well iced. Refrigerator cars or refrigerator trucks are kept by the railhead for storing fresh products not issued. The veterinarian checks the cars daily to see that they are clean and well iced. We have had few rejections with the "A" ration. We did receive a carload of corn unfit for human consumption because the car had not been re-iced enroute. The corn was moldy, sour, and rotten.

Our main diet has been the "B" ration, which is canned with the exception of over-seas ham and bacon, oranges, potatoes, carrots, and onions. It also includes various

dehydrated fruits and vegetables. Our main rejection with this diet has been evaporated milk.

The actual field rations, "C", "K", and "5-in-1", we receive only during maneuvers, and then only for short periods. The main use of the field ration in the desert is for training. The "5-in-1" ration seems to be the best of the three for continuous use.

Occasionally, outbreaks of food poisoning occur in the Desert Training Center area and precautions are published in the *Daily Bulletin*. I usually check with the railhead kitchen to see that they observe the published precautions. It is, sometimes, a good policy for the veterinarian to follow the inspected food into the



Fig. 6—A member of the Veterinary Service inspecting cans.

kitchen. For example, recently an outbreak of food poisoning was traced to improper methods of reconstituting dry, whole-milk powder. The use of ice in the mixture, prepared the night before serving, resulted in contamination and rapid multiplication of toxin-producing organisms. Therefore, while a soaking period to allow complete absorption is necessary to make a palatable drink of powdered milk, it is dangerous to prepare the mixture more than two hours before serving, unless good me-

chanical refrigeration is available. It was suggested that the reconstituted milk be kept as cool as possible without putting ice directly in the drink; by packing with ice; and by using cool water from desert bags or other evaporating devices for mixing.

Along with the food inspection and sanitation, the veterinarian is also responsible for the control of rabies. We have a few dogs at this railhead and they have all been vaccinated.

Letter from New Zealand

Gentlemen:

Please credit the enclosed amount (£3, 3s, 10d) for my 1944 dues and subscription to the JOURNAL OF THE AMERICAN VETERINARY MEDICAL ASSOCIATION and *American Journal of Veterinary Research*.

New Zealand is a land of beauty, splendor, and marvelous climate. It is now (February) midsummer. Refreshing rains have stimulated growth after an unusually dry season. Milk production is, therefore, slightly under the previous year. The current rains are renovating, provided they do not predispose to an outbreak of facial eczema. There is already a trend in that direction, as in 1938.

The work here is interesting. We are kept busy throughout the year. Mastitis and sterility are two of our main problems. Regarding mastitis, I must admit that stressing sanitation and hygiene and giving advice on prevention is as far as we venture. We are called to render medical aid only to acute cases. Sterility due to abnormal ovaries is, indeed, a problem. Before our arrival, about 15 per cent of the dairy cows had to be eliminated on that account. Manual examinations showed approximately 95 per cent of cows so affected. We have lowered the high incidence by corrective treatment. I would be grateful for literature on the cause and treatment. Tuberculosis and brucellosis are two other problems. There is no sound program in operation for the control of tuberculosis in this country, and it was only last year that a plan was introduced for handling brucellosis.

A condition of high mortality among calves gives us much trouble. After eliminating other causes, I suspected that it

might be a salmonellosis. The condition described in the JOURNAL (Sept., 1943) by R. Plata Guerrero [of Ecuador*] appears to be similar to the one we have here.

I regret to state that I have found the service of the government laboratories unsatisfactory and discouraging. However, after seeing Guerrero's article, I again sent samples of material and stated my suspicions; a report was received that the trouble was salmonellosis, but upon inquiring whether a vaccine could be obtained, I was told abruptly that they had no vaccine and had never met the disease in this country.

The officers of the Veterinary Corps, A.U.S., have had the opportunity to study conditions here. Mine are but personal views. I would appreciate literature on salmonellosis.

s/R. K. Greisbach, Matamata, N. Z.
Feb. 10, 1944.

Equine Encephalomyelitis in Venezuela and Trinidad

An epizootic of equine encephalomyelitis took a heavy toll of horses, mules, and burros throughout Venezuela since October, 1943, particularly in the state of Apure, and in Trinidad, according to the April issue of the *Bulletin of the Medical Department*, U. S. Army. The medical and veterinary officers in Trinidad, coöperating with the government of Venezuela, in an effort to identify the virus and to control the disease banned the importation of these animals and swine from Venezuela but the disease nevertheless appeared.

Brucellosis in Venezuela

Boletín oficina sanidad panamericana (Venezuela), in an article on brucellosis, reveals that the disease is rare in man, swine, sheep, and goats but very prevalent in cattle which are, therefore, the main reservoir of the infectious agent. Test and slaughter, vaccination with "killed germs", and educating the public as to the need of combating the disease are the measures proposed. Pasteurization of milk is advocated. The senior author of the article is Rafael Risquez Iribarren.

* R. Plata Guerrero: Salmonellosis in Calves in Tropical Countries, J. A. V. M. A., 103 (Sept. 1943); 152-154.

Meat Inspection in Illinois Still a Problem for Municipalities

N. O. GUNDERSON, M.D., and LAUREL LODIN

Rockford, Illinois

IN THE LIGHT of present knowledge in the field of meat sanitation, it is well to ask why our known and accepted control measures have not been more universally applied.

To answer this question satisfactorily, it is necessary to consider some of the limiting factors for a proper control of meat supplies. Among these may be mentioned the economic, the esthetic, and the quality aspects of the problem; certain long established ordinance features; and an apparent lack of appreciation of the potential health hazards involved.

ECONOMIC ASPECT

The economics involved is always a limiting factor in connection with control work as evidenced by the fact that present effective meat-control programs presuppose that from four to eight cents per capita per year will be available for carrying out the work.

When we remember that the majority of smaller municipalities and counties now provide practically nothing for meat supervision and that the average provision among cities is about two cents per capita, the seriousness of the economic angle is better appreciated.

ESTHETIC ASPECT

As to the esthetic aspect, authorities in the field of meat inspection are in accord with the excellent conditions under which federally inspected meat is processed and handled. We should be pleased to have the same attractive conditions surround the handling of home-dressed meat.

However, when we remember that these favorable conditions entail a necessary public expense, we understand why our esthetic desires have not had full sway in proper meat processing. In other words, our esthetic desires are in fairly constant conflict with the economics of the situation.

Commissioner of Health (Gunderson) and City Food Sanitarian (Lodin), Rockford.

MEAT QUALITY

The third aspect of control work is that concerning the quality of meat sold. It is agreed that many city health departments are striving to improve the quality of meat by measures which are directed toward the esthetics of the situation, in the hope that this will solve the problem of quality.

Under such conditions, it is not surprising that our city, meat-inspection, control efforts are not producing the results desired.

ORDINANCE CONSIDERATIONS

Fourth, practically all municipal, meat-inspection ordinances provide observation of the meat after it reaches the retail stores, which perhaps does not offer the dependable quality picture originally anticipated when these ordinances were passed.

For instance, it is now apparently believed by many health authorities that antemortem and immediate postmortem examination of meat carcasses plus certain essential laboratory tests are paramount if the retailer and the public are to be protected. As a matter of fact, when these measures are not carried out, we find the public confronted with the sale of meat through "black market" channels, discussion of which has occupied so much space in newspapers the last twenty-four months.

Generally speaking, retail meat dealers are strong in their support of federal, state, and city inspection of meat.

FEDERAL INSPECTION COMMENT

As to meat control under the provisions of the federal meat inspection law, which now has been with us for practically thirty-seven years, this law apparently comes no nearer to unifying intrastate meat control than at the start, because of the many cities and counties still obliged to rely on home dressed meats not covered by the federal inspection regulations.

Furthermore, in Illinois, outside of the Chicago markets, and some of the Peoria

markets, and also the St. Louis markets, between 40 and 60 per cent of the meat sold has no inspection whatsoever.

HEALTH HAZARD IMPORTANT

Lastly, experience shows that we are still continuing to control meat inspection by our old systems, which must be changed or modified. Vigorous ante- and immediate postmortem inspection service will have to be inaugurated for meat not covered by federal inspection if diseases spread from animals to man are to be curbed.

Records on file in the laboratories of various city health departments throughout Illinois bear witness to this assertion.

MEAT QUALITY YARD STICK

Health authorities seem agreed that the quality of meat is made up of five essentials: (1) nourishment or food value; (2) safety or freedom from disease producing organisms; (3) cleanliness or freedom from physical dirt; (4) freshness or keeping quality; (5) and flavor or palatability.

The value of this classification is much increased by the fact that indexes are available for each of these conditions, and these indexes may be used in the control of meat supplies.

CERTAIN PROCEDURES CAN BE APPLIED

For instance, (1) food value is indicated by grading; (2) safety is indicated by physical observations for disease; (3) cleanliness is indicated by checking packing-plant techniques; and (4) keeping quality and flavor are indicated by proper storage, refrigeration, and transportation according to accepted standards.

When laboratory facilities are available, certain microscopic tests can also be used in conjunction with ante- and postmortem examinations. Experience in packing houses under federal inspection over a long period indicates that these examinations give a great deal of information regarding the causes of poor quality meat, not only in carcass form but in the various kinds of processed meats.

SLAUGHTER-HOUSE INSPECTION

With these apparently reliable inspection procedures at hand, an increasing number of health departments and county veterinarians are vigorously striving to see whether or not meat-inspection measures can be applied at the points where meat is received for delivery into cities for the pur-

pose of rejecting such meat and meat products as do not meet certain accepted, sanitary standards.

In other words, following an initial antemortem inspection at the buying yards, the point of observation and determination of meat is shifted from the yards to the slaughtering plants.

The attempt to control the meat largely by stipulating the environment under which it is processed has given place to an attempt to measure in the meat itself those qualities which make it attractive and safe to the consumer.

FOUR-POINT CONTROL SYSTEM

In the light of this situation, it appears reasonable to give serious consideration to the possibility of streamlining meat control by utilizing certain accepted buying-yard and slaughtering-plant inspections, under qualified veterinarians which can be used to assure an ample supply of safe, wholesome meat and meat products for the armed forces, lend-lease shipments, and civilian use.

Such an attempt is provided for in a four-point control system for judging the quality of meat by utilizing (1) antemortem examination, (2) postmortem examination, (3) routine sanitary slaughtering-plant inspection, and (4) proper refrigeration, processing and storage, together with certain other simple observations applied to the meat itself.

In this plan, qualified veterinarians with lay assistants carefully inspect all procedures, and, when indicated, unwholesome meat is condemned *on the spot* for consignment to tankage. This affords the city inspector more time for cooperating with retailers in the proper handling of meat, and so permits quicker and more effective control of the quality of meat sold to the public.

Retail dealers in meat and meat products welcome this method of procedure.

APPLICATION OF PLAN ATTEMPTED

Sensing the significance of this approach, a bill known as House Bill No. 499 was presented to the Sixty-third Illinois General Assembly, which failed of passage, evidently because of lack of public interest and failure to be endorsed by the Committee On Appropriations. Generally speaking, the content of this bill was well received.

Since then, however, there has spontaneously arisen a public demand that all meat and meat products sold in Illinois be federal, state, or city inspected, except that which is slaughtered by producers for their own family use, in accordance with the bill mentioned previously.

ARE PRESENT QUALITY STANDARDS SATISFACTORY?

With this picture in mind, let us now ask as to whether our present meat-quality standards are satisfactory. In the case of home dressed meat sold without federal inspection, the answer of course is "no" because of the continued large amount of meat and meat products sold through questionable channels.

However, in communities where meat is sold on the open market, this plan would have come nearer to showing the quality of meat than any other means available thus far. Indeed, instant rejection of inferior carcass meat *on the spot* for consignment to tankage is the only way to keep undesirable meat from reaching the buying public.

SHOULD WE USE BUYING-YARD INSPECTION MORE?

The second question as to whether it is desirable to employ buying-yard antemortem inspection more can perhaps, at this writing, be answered in the affirmative based on experience, especially in California which has had a state meat inspection law since 1916.

Results obtained with the four-point control system discussed, apparently speak for themselves.

IS A UNIFORM STANDARD FOR ALL MARKETS DESIRABLE?

As to uniform standards for all markets, it perhaps can be said that in terms of buying-yard antemortem inspections and sanitary slaughtering-plant control under qualified veterinarians, the answer is "yes" because, after all, these criteria meet the economic, esthetic, and quality aspects of the problem. In other words, no matter the market, these criteria can be utilized at a cost that is within reason.

IS A SINGLE STANDARD FOR ALL MEAT INDICATED?

Finally, the question of whether we want a single standard for all meat regardless

of its utilization. It appears that the exclusive use of federally inspected meat and meat products for the armed forces and lend-lease shipment seems to present satisfactory evidence that the answer to this question is "yes". If this be true, are not civilians entitled to the same public health protection?

OVERALL PICTURE SPEAKS FOR UNIFICATION

The overall picture then is one in which it appears desirable to unify our meat-quality program in terms of data presented, not perhaps in the next year, but in a shorter time than has been our experience with the standards used during the last quarter of a century outside of federal inspection channels. Under the federal inspection meat law, it was presumed that a greater degree of public acceptance could have been expected in the demand for this class of meat for intrastate use.

Unification under a four-point control system with abolition of fly-by-night meat slaughterers, plus selective, sanitary inspections and condemnation on the spot apparently offer possibilities.

A STATE LAW APPEARS TO BE THE ONLY SOLUTION

As to a solution to this problem, it still appears that a state law recognizing federal, state, and municipal inspection of meat and meat products, according to definite rules and regulations, is the key to the protection of the public health.

If such be the case, it is suggested that the Illinois Municipal League again take an active part in fostering a bill similar to House Bill No. 499 to be presented during the coming Sixty-fourth General Assembly.

CONCLUSION

From data presented, it appears that our present meat-control procedures should be critically reexamined, with the object of eliminating what have become, with the passage of time, certain questionable practices, tending to jeopardize the public health in Illinois.

The National Dairy Council announces that 18 per cent of 1944 butter will go to the armed forces. The soldiers in garri-son consume 2 1/2 times as much butter as civilians.

Observations on Heartworm in British Racing Greyhound Kennels in Nassau

LIEUT. HENRY CHARLES BURNS, D.V.M., V.C., U.S.A.

Camp Croft, South Carolina

ALTHOUGH much has been written lately about filariasis in dogs, little has been added to our present knowledge of the disease. In the following report, I have set down the results of two years work on the British

stitute a menace to all newly imported dogs.

The first shipment of Greyhounds arrived on Dec. 28, 1940, and more continued to arrive in small lots until a total of 14 ma-

Fig. 1—Specimens of racing Greyhounds shipped from England to the British West Indies as a wartime precaution against loss of precious blood lines.



Racing Greyhounds brought to Nassau, Bahamas, for safekeeping and the perpetuation of certain blood lines.

Here in Nassau, heartworm is a considerable problem because there are many stray dogs and no dearth of insect vectors the year round. Since all native-born dogs sooner or later become infected, they con-

stitute a menace to all newly imported dogs. The first shipment of Greyhounds arrived on Dec. 28, 1940, and more continued to arrive in small lots until a total of 14 ma-

ture males and females were landed by May, 1941. Also 4 pups, 2 months old, born enroute from England, arrived from Halifax, January, 1941. Since their arrival and up to October, 1942, a total of approximately 50 normal, healthy pups has been born and raised in the kennels, fifteen miles from the city limits. Let me point out here that there are small Negro settlements in the vicinity

Approved by the Bureau of Public Relations, War Department, Washington, D. C.

where native mongrel dogs wander about and are known to be heartworm infected. They very likely are the source of the subsequent heartworm infection in the Greyhounds.

All mature dogs are housed in screened kennels but the pups are allowed to remain in large open paddocks, containing a sufficient number of unscreened wooden shelters. During wartime with material getting scarce and no boats arriving from England to replenish building stock in Nassau, and considering the impracticability of screening shelters for the large number of pups arriving and continuing to arrive, it was decided to provide them with large, grassy enclosures. The records reveal that the pups born in Nassau and raised in these open paddocks, with ample opportunity for exposure to heartworm infection, first became positive to the monthly blood test on the average of eight months after birth. Furthermore, from birth to weaning (approximately one to two months) the pups and dams were confined to screened and mosquito-free maternity kennels. Therefore, it can be assumed that from the time of the initial infection to the first indication of heartworm infection, through a positive microscopic diagnosis, may be as

short as six months. In no case did clinical symptoms precede a positive blood test.

All Greyhounds, from weaned pups to mature dogs, were tested monthly by the rapid blood smear, low power microscopic test. The records on the better protected mature dogs (*e.g.*, those in screened kennels for sleeping) substantiate the findings on the pups. Lido Lass, a pup bitch, born in Nova Scotia and delivered in Nassau on Jan. 24, 1941, first became positive on Nov. 26, 1941, an interval of ten months from first possible infection to first positive blood test. Since the records of the pups reveal a minimum of six months from the first possible infection to the first positive blood test, it is safe to assume that the discrepancy of four months in the filaria's life cycle in the pups and in the mature dogs is not a discrepancy but the logical result of the increased protection afforded the mature dogs by screening their quarters. Although every dog eventually became infected, some of the mature dogs, noticeably the more active and more vigorous, remained negative for periods up to sixteen months after arriving in Nassau. (Lavish Relative—*see* records.)

It has occurred to me that perhaps a more sensitive test than the rapid blood microscopic test might reveal a further reduction

Heartworm Record for British Racing Greyhound Kennels in Nassau, Bahamas

DATE TESTED	NAME	AGE (YR.)	SEX	WEIGHT (LB.)	ARRIVED NASSAU
Nov. 26, 1941	Aurora	4	F	55	Jan. 24, 1941
Nov. 26, 1941	Lido Lass	1	F	45	Jan. 24, 1941
Dec. 11, 1941	Adjutant	3½	M	70	Feb. 28, 1941
Dec. 11, 1941	L for Leather	1	M	54	Jan. 24, 1941
	Mistress of				
Dec. 11, 1941	Waterhall	6	F	54	Jan. 24, 1941
Dec. 11, 1941	Gamins Rag	5	F	62	Dec. 28, 1940
Dec. 11, 1941	Jannesley	7	F	55	Feb. 28, 1941
Jan. 14, 1942	Safe Rock	8	M	68	Dec. 28, 1940
	Kinauld				
Jan. 14, 1942	Demonstrator	6½	M	62	May 24, 1941
Jan. 14, 1942	Ariadne	4	F	58	Jan. 24, 1941
Jan. 14, 1942	Grave Recluse	5	F	58	Feb. 28, 1941
Jan. 14, 1942	Lonely Laddie	1	M	54	January, 1941
Jan. 14, 1942	Jannesley	7	M	55	Feb. 28, 1941
Feb. 12, 1942	Jantar	7	F	65	January, 1941
Feb. 12, 1942	Lost League	1	M	65	January, 1941
March 11, 1942	L for Leather	1	M	52	Jan. 24, 1941
March 11, 1942	April	4	F	44	May, 1941
Apr. 7, 1942	Lavish Relative	7½	F	50	Dec. 28, 1940
*Apr. 7, 1942	Grave Recluse	5	F	55	Feb. 28, 1941

*At this time, all the mature dogs had at one time shown positive and received treatment, subsequently these dogs became positive again.

in the interval between infection and earliest diagnosis. However, until such time, I must conclude that, given no protection against the mosquito in an area where heartworm in dogs is common, the minimum time after infection in which a positive microscopic diagnosis can be made is six months. Furthermore, screening the sleeping quarters and keeping the kennels free of mosquitoes and ticks provide limited protection. That the Greyhound, being a thin-skinned, short-haired dog, showed a greater susceptibility to heartworm than did the long-haired dogs, presented to me for blood testing during the same two-year period, is further argument against clipping dogs in the summer where heartworm and mosquitoes are prevalent.

My treatment, depending on the age, health, and size of the dog, varied between the use of Filsol, Fuadin, and cured leaf tobacco; the last was administered orally to those dogs too old and too heavily infected for hypodermic treatment. For these older dogs, evidencing advanced clinical symptoms of bronchial cough and shortness of breath (dyspnea), the use of cured leaf tobacco for a short time on a low fat diet, often eliminated the more advanced

symptoms; providing the animal was able to keep the tobacco down. What real or permanent effect, if any, the tobacco had on the heartworm itself I was unable to ascertain. Further work in that field should produce some interesting results.

In conclusion, I would like to pass on the following observations as they may be useful in guiding the breeding programs of kennels that are confronted with the same problem: Treatment administered and completed before breeding did not interfere with conception except in one case (this case possessed other complicating factors that could have produced sterility). However, 95 per cent of those cases that bred true and conceived, aborted at varying times during gestation and the other 5 per cent whelped deformed or poorly developed pups, lacking vigor. On the other hand, those bitches that were subsequently not treated carried the full term and whelped normal healthy litters, even though at whelping time they indicated heavy heartworm infection. It was further observed that at least six months should elapse after treatment is completed before the dog should be bred to insure a normal number of healthy pups.

Breeding and Blood Test Records on Pups

DAM	SIRE	No. EA. LITTER	BORN	PUPS SHOWED POSITIVE BLOOD TEST
Gretas Riches	Adjutant	1	Aug. 19, 1941	May 1942 (1)
Mistress of Waterhall	Adjutant	5	Aug. 23, 1941	April 1942 (5)
Ariadne	Adjutant	1	Aug. 30, 1941	April 1942 (1)
Grave Recluse	Safe Rock	7	Sept. 8, 1941	April 1942 (5) May 1942 (2)
Jannesley	Adjutant	4	Sept. 29, 1941	May 1942 (4)
Bryn Fatima	Adjutant	6	Dec. 4, 1941	July 1942 (5) August 1942 (1)
Lavish Relative	Kinauld		Jan. 2, 1942	September 1942 (7)
	Demonstrator	7		
Jantar	Adjutant*	3	March 4, 1942	Whelped dead
Gamins Rag*	Safe Rock*		March 18, 1942	Aborted
Mistress of Waterhall*	Adjutant*	4	Apr. 2, 1942	Blood tests discontinued Whelped dead
Aurora*	Safe Rock*	5	May 12, 1942	Blood tests discontinued (1) Deformed—dead (3) Died—3 days old (1) Survived (1)
Grave Recluse*	Kinauld		May 17, 1942	Blood tests discontinued.
	Demonstrator*	5		Litter weaker but otherwise normal (5)

*Heart worm treatment was completed less than six months before breeding.

Since treatment was discontinued, Safe Rock and Kinauld Demonstrator have sired normal sized, healthy litters with no further abortions or dead whelps from the bitches listed above.

SURGERY & OBSTETRICS

AND PROBLEMS OF BREEDING

Pleasure Horse Practice

A. G. MADDEN, JR., D.V.M.

Madeira, Ohio

MY PRACTICE is different to that of many of you in that the people I work for make their money in town and spend it on the farm, while most of the people you work for make their money on the farm and spend it in town. Most of the barns where I am called to treat animals have running hot and cold water; the horses are in individual box stalls with the horses' names on the front of them. Winter or summer the horses have blankets on, and there is a groom to take the best possible care of them.

In 1925, a group of business men in Cincinnati decided to organize a hunt club. After the organization and location were decided upon, they leased, or received permission to hunt over, about 35,000 acres of land. As you know, southern Ohio is a hilly section with a heavy clay soil, and many creeks and rocks. This factor in itself makes a hard job for a veterinarian as they hunt Tuesdays, Thursdays, Saturdays, and holidays.

Our pack consists of 120 hounds. They are English, American, or crossbred hounds. From 60 to 100 are used on each hunt.

The horses are all kinds that can jump, and sometimes some forget to jump—then we have a patient. In one stable, we have practically all imported Hunters, in others, we have Thoroughbreds not fast enough to race. Others are crossbred horses.

When the horses are brought in from pasture the first of August and started in training, they are clipped from the legs up, to protect them from briars and brambles. In some, the mane is clipped, in others it is pulled. The tail also is pulled similar to a

three-gaited horse, except the hair on the top side is left a little longer than that on the sides. During this time, we are called to dress their teeth and "worm" them, and treat them for bots after a good frost.

The horses are exercised every morning—the groom riding one and leading a couple. The 4-year-old colts are taken with the older horses so that they may become accustomed to the hunt field and to the jumps. At first, the colts are put over low jumps, about 18 inches to 2 feet. After being schooled in the field, they are put into a round jumping pen or corral with a jump on either side. These jumps are made solid so that if they don't make the jump, the horses hit their legs, which hurts, and the next time they will try to get over. When the horses are put in the corral, they are turned loose and the groom starts after them with a whip, so that they soon learn when to take off for the jump. After several days of this sort of training, the jumps being raised, they are ready for their lesson in the field. One groom takes an experienced horse and goes over the jump ahead of a colt, so that after a few lessons the colt is ready to go into the hunt field. Naturally, this entails more education of the colt as there are from 10 to 50 other horses in the field on his first day of hunting. After a few lessons of this kind, he is ready to be hunted with the field.

Most of the jumps are from 3 1/2 to 4 feet and are post and rail, brush, water, or chicken coops; also stone walls with logs fastened on top. Some may be at the top of a hill, others at the bottom in flat country.

The hunt may end one to ten miles from the stable. Most of the horses are hauled home—some are hauled in trailers or special trucks. Upon arrival home, the horses

Excerpt from the Annual Report of the Indiana Veterinary Medical Association. Presented at the annual meeting of the I.V.M.A., Jan. 11-13, 1944.

are washed, blanketed with heavy Baker blankets, and fed about two hours afterward.

INJURIES

The injuries vary from a slight cut to a more serious wound, such as cut tendons and ligaments. I have seen a horse take a jump and cut all of the tendons and ligaments from the hock to the fetlock. On one occasion, an owner decided that he should hunt his Thoroughbred in bandages similar to those used on a race track. Evidently the groom had had little experience in bandaging a horse and the next day the horse had a deep cut at the top and bottom of the bandage. The one at the bottom was so deep that the flexor tendon was cut. Two or three days later the skin on the back of the leg sloughed off and about three inches of the superficial tendon with it. The wound was treated daily and three months later he was being used as a hack horse and was perfectly sound.

Another interesting wound in the axillary region was that of a fine harness colt hitched to a Kentucky break cart which in some way fell, the right shaft entering the axillary region just above the elbow joint and going through all of the muscles, and the point of the shaft could be felt just under the skin at the breast. He recovered.

LIGAMENT AND TENDON

With the footing from very good in the early hunts in the fall to poor with the ice and frozen ground in the winter, pulled and ruptured tendons just happen; and as that means laying the horse up for some time, the owner becomes unhappy and dissatisfied, thinking that these injuries should heal in two or three days. Our most trying time for such conditions is around the holidays, or when the children come home for vacations and all want to hunt.

I think that each of us has his own pet method of treating these cases, but I have found that if I keep the owner or groom busy fussing with them I get better results. For example, if I want a horse's leg packed in Epsom salt water, I usually take about three bottles with me, each of different color and smell, having them changed every three or four hours. You will be surprised how the owner or groom will feel that one preparation is better than the others, although they are the same medicine. The usual line of conversation is: "Doc, he

seems to get along better with the red medicine; after I put that on he seems to walk a little better"—so we see that he gets plenty of the red medicine.

BROKEN BONES

A nice three-quarter horse was cantering along in the hunt field when he slipped and fell. He was able to get up, but could bear no weight on his off foreleg. My diagnosis of a fracture of the head of the humerus did not satisfy the owner, so I suggested that he call someone else, which he did. However, in about six weeks the horse was destroyed and the autopsy showed a fracture through the lateral tuberosity of the humerus.

An interesting case showing the "do or die" attitude of some of the Hunters: A Thoroughbred going into a jump with a woman riding stepped into a hole about 10 feet from the jump, breaking his leg, made the jump, came down on three feet and didn't fall or upset his rider, which goes to show that the Thoroughbred has all the stamina that could ever be expected of any horse.

We have set a few broken legs of some of the better mares, or ones that the owner wanted to pension. On these, we have used a modified Thomas splint made from steel rod, and have had good success.

SURGICAL OPERATIONS

I think that we have been called upon to do, or try to do, about everything—cuts of all kinds, kicks, tears, punctured wounds, supernumary teeth, fistulous withers, poll evil, obstetrics, castrations, etc. On these, I try to estimate the average time that it will take for the operation, then use the anesthetic that is best suited to that particular need. In all castrations and minor operations, I use chloroform. I like chloroform as the dosage can be regulated.

In castrating, we put a rope halter on the animal, snub him securely, then put a gunny sack under the noseband of the halter, down over his nose and up under the chin strap in the back, with his head snubbed securely, and with a man on the end of the rope, we stand in front of the animal and pour on the chloroform until the animal starts to struggle, then stop and wait for him to go to sleep. As he starts to sway, we take hold of his tail so that we may make him lie on the side desired. As he goes down, the man on the

halter loosens his tension until the horse is down, then merely holds the rope tight enough so that he can control the struggling. After the horse is down (we prefer him on his left side for castration; however, this depends entirely on the operator), we put a side line on the off hind foot, drawing the leg forward with a wrap around the post or tree so that the man on the halter rope may also hold the rope on the foot. In order that there may not be a catastrophe from too much chloroform, remember this one point—when making the incision to remove the testicle, the horse should flinch. If he does not, it is evident that too much anesthetic is being given and the man at the head should remove the mask. As soon as the testicles are removed, the man at the head removes the mask. In a few minutes, the patient is up. I used this operation on some 35 head last year—from Shetland ponies, mules that had never had a rope on, to an 8-year-old Percheron stud. Chloroform anesthesia in castration is one of the best ways to demonstrate good technique, obtain satisfactory results, and thereby build a good practice. Most of my clients are surprised that all one needs is one man, a lariat, rope halter, and gunny sack. So the next time you castrate a colt, try it, and you will never use hobbles again.

In fistula (withers) operations, I use chloral hydrate—2 oz. to 1 pt. distilled water or normal saline solution, intravenously. Where we have had an animal out for some time, we usually give 500 cc. of 50 per cent dextrose, intravenously, following the operation.

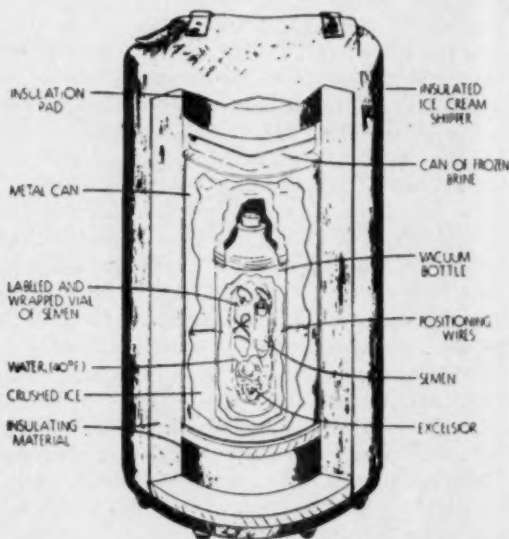
We have tried vaccination with strain 19 abortion vaccine for fistula of the withers, but it is too soon to give the end results. We are giving a series of three injections of 6 cc. each, one week apart. Some report that they get a severe reaction, swelling at point of injection, fever, going off feed, etc., but so far we have not encountered such a reaction.

I always use an epidural anesthetic. In colts, where we have to set a leg or some other operation that will take some time, we have used nembutal, intravenously, and have had some marvelous results.

You can buy War Bonds in any one of a million places during the present bond drive.

Shipping Dairy Bull Semen Long Distances

Along with the refinement of artificial insemination in cows, the desire to breed cows to far-away bulls increases. Two or more days may elapse before the semen specimen arrives. . . The problem includes the practical means of maintaining the



—After Swanson and Herman, 1944

A Packed Semen Shipper

stated temperature, and the use of containers, properly insulated, that will not break in shipping by express or parcel post. A temperature between 35 and 45 F. can be maintained by using an outfit preconized by Eric W. Swanson and H. A. Herman of the Department of Dairy Husbandry, University of Missouri, which they described in the *Journal of Dairy Science*, February, 1944, (see, figure).

The outside unit is a common shipping package such as is used for ice cream. Within is a metal can of frozen brine surrounded with insulation material. Within the can is a vacuum bottle filled with water at 40 F. in which to set the semen vials. Excelsior at the bottom of the vacuum bottle keeps the vials from bobbing, and wiring holds it in place. This arrangement will keep the desired storage temperature for eighty-four hours in a summer heat of 80 F. Temperatures of more than 50 F.

and of 32 F. or less destroy fertility. Twenty-four shipments made by this method successfully delivered semen of motility as good or better than that obtained by shipping at 40 F. in a refrigerator.

Chestnut Horses

Veterinarians who have not forgotten their genetics need not be told that breeding chestnut will yield chestnut colts as sure as zero plus zero always adds up to zero. Chestnut is a recessive color. When a chestnut horse is born of parents of other colors, the chestnut color was simply obscured in the ancestors.—*From the Thoroughbred Record.*

Drainage and Antiseptics

During World War I, anaerobic infections were so difficult to prevent that the Surgeon General of the American Expeditionary Forces prohibited the primary suturing of battle wounds, and experiences with sulfa drugs in World War II have not been found sufficient reason for changing that directive. Drainage in the battle against bacteria has not lost caste by the coming of "miracle" and "wonder" drugs, says the present Surgeon General of the Army in the *Journal of the American Medical Association*.

Tantalum (=Ta)

Tantalum, element .73, rare, bluish-white metal of great strength, and malleability, has been named "the perfect surgical metal" by surgeons of the Army and Navy. It can be drawn into fine material for suturing nerves and tendons, made into splints for fractures, or molded for rebuilding lost body structures. Although discovered in 1803, it was not produced commercially until 1922. Tantalum is produced in Australia, Sweden, and Norway, and important amounts can be mined in the Black Hills of South Dakota. According to the property and uses described, it should be useful material for veterinary surgery.

Sulfamerazine is reported to be an effective treatment for delayed shock, the form of postoperative collapse caused by bacteriemia.

The Fall Pig Crop

Sows should be bred so that they will farrow no later than September. This sets weaning time before the coming of harsh weather and yields a March crop of market hogs. In two-litter sows, this means early farrowing of the spring crop should be clocked to get the pigs weaned before the first of June.

Refrigeration Anesthesia

Complete surgical anesthesia induced by refrigeration of a limb to be amputated is practiced in human surgery. A tourniquet that completely stops circulation is applied above the site of amputation and the refrigeration is accomplished with ice packs. The method produces a bloodless and shockless field and is pronounced advantageous in poor-risk cases—diabetes and arteriosclerosis—but numerous clinical applications have been suggested by the Department of Surgery of Stanford University.—*From Annals of Surgery.*

N. P. Casualties



—Official U. S. Navy Photo

Neuropsychiatric disability, abbreviated N. P. in the language of the Medical Corps of the Navy, was called "shell shock" in World War I. N. P. is as much a mishap of modern warfare as a bullet wound or an attack of malaria. He who has been struck with the atmospheric vibrations of a high explosive at close range will understand.

Stader Splint Available for More General Distribution

This skeleton, showing the many possible applications of the Stader Reduction and Fixation splints to the body, was exhibited by the General Electric X-Ray Corporation,



Chicago, at two recent medical meetings—the American Association of Military Surgeons and the American Academy of Orthopedic Surgeons.

World-wide distribution of the Stader splint, which has come into prominence for

management of fractures during the war emergency, has been taken over exclusively by General Electric X-Ray. For some time, total production facilities for the manufacture of the splint were devoted to the filling of orders for the United States Navy and the Canadian armed forces. These orders are now nearing completion and a limited quantity of the splints will become available for use by civilian surgeons.

The splint, invented by Otto Stader, a veterinary graduate of the University of Pennsylvania, has won wide acclaim among the medical profession because it requires no extension apparatus, no special frame or fracture table, and no plaster cast.

The splint consists of a half-pin unit placed in the proximal fragment, and a second half-pin unit in the distal fragment. An adjustable connecting bar assembly joins the two half-pin units to each other and bridges the fracture. By activating the turnbuckle in one direction, the fragments are distracted. By activating it in the opposite direction, the fragments are apposed. Reduction maneuvers are performed by activating certain screws.—*John L. Bach, General Electric X-Ray Corporation, Chicago.*

Dehorning Hot Iron

A cup-shaped firing iron used by clapping it, red hot, over the horns of calves to arrest horn growth is a new way of bloodless dehorning, says *Clapper Farmer*. Three sizes of iron are used and are the size of a dime, a nickel, and a quarter. Joe J. Crow of Oklahoma is named the inventor. The eschar prevents screwworm infestation and leaves no wound for the screwworm fly to "blow."

Plaster of Paris Saw

A small, electrically driven circle-saw mounted on a pistol handle for sawing through heavy plaster casts about to be removed has been invented and patented by Ernest Odierna and Angelo Procaro of New York City. The convenience of such an instrument in small animal surgery is self-evident. The announcement of this invention was made under the headline "Mechanized Surgery" in *Science News Letter* of Apr. 8, 1944.

CLINICAL DATA

Clinical Notes

The Middlewest of Brazil is an iodine deficiency zone, comparable to our Goiter Belt, where an alarming number of goiter cases exist.—*Nutrition Reviews*.

Wagner and Elvehjem of the Wisconsin Agricultural Experiment Station found that ground swine hoofs are a satisfactory substitute for meat scraps and fish meal in poultry rations.

Cuticular structures such as hair, feathers, horn, wool, and hoofs, although generally pronounced completely indigestible, are a source of protein if finely ground, according to a survey of the literature on the nutritive value of keratins, published in *Nutrition Reviews*, for March, 1944.

Ticks (*Ixodes*) of dogs, cattle, and rabbits are capable of transmitting to man Rocky Mountain spotted fever, tularemia, exanthematous (Mediterranean) fever, São Paulo typhus, and central African relapsing fever. The Army surgeons warn against their removal by hand and recommend suffocating ticks with liquid petrolatum, glycerin, or kerosene.

Horsefly a Vector of Anaplasmosis

In a study carried out by Lotze of the Animal Disease Research Station, Beltsville, Md., it was shown that the horsefly (*Tabanus sulcifrons*, Marquart) transmits anaplasmosis from cattle in which the presence of the organism can be demonstrated microscopically in the blood of the experimental animal. The trials, however, were negative in animals affected with anaplasmosis for as long as eleven to seventeen months but in which the presence of the organism in the blood could not be demonstrated.—*Am. J. Vet. Res.*, 5, (Apr. 1944): 164-165.

The sulfonamides are listed among the antivitamin. Their use with that action in mind is suggested.

As a source of thiamin, pork stands highest among the various meat products of the human dietary. There is little disagreement in this respect among nutritionists.

Canine scabies, feline scabies, and rat-mite dermatitis are among the skin diseases of soldiers mentioned by the Medical Department of the Army. They respond to antiscabietic and antipruritic treatment.

The prevailing, and obviously the correct, conception of famalial tuberculosis is that man, like cattle and fowl, contract the diseases through long contact with the sick and that rapid and manifestly destructive tuberculosis is attributed, in addition, to a genetic factor. In the latter respect, tuberculosis is hereditary.

Some Specific Natural Intoxicants

Distinct from the plants designated as injurious to animals, that is, as definitely poisonous, there are sources of toxic principles in the forage of animals which command attention in clinical veterinary medicine. For this group the mind turns to the *seleniferous plants* of the Northwest, *fluorides* of rock phosphates and drinking water, *gossypol* of raw cottonseed, *dicoumarin* of sweet clover, *prussic acid* of sorghum, the *toxic principle of tung*, foreign plant, now being grown in the South, to single out some of the sources of specific natural intoxicants worthy of considerable study in the feeding of farm animals.

Spastic Paralysis in Domestic Rabbits

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SPASTIC PARALYSIS in domestic rabbits *Oryctolagus cuniculi* was first observed by us July 5, 1938, when affected animals were presented to this station for observation and diagnosis. During our period of investigation, we gave this disease the descriptive layman's term, "head down disease," thus dissociating the symptoms in the minds of rabbit breeders from those of a disease known as wryneck.

The condition appears suddenly and is acute. The rabbits are found in a crouching position with their heads tucked between their front legs. The frontal areas are resting on the hutch floor with the ears held close together. The eye balls are rotated outward and backward toward the outer canthus of the eye, thus giving to the eyes a protruding appearance. The pupils of the eyes are frequently dilated. The shoulder blades are spread wide apart. Affected animals move backward with a peculiar stilted gait. They are extremely nervous; ordinary handling or unusual sounds cause tetanic spasms which continue for several minutes. Recovery from a spasmodic attack is slow; the animals appear exhausted. During the attack there is a marked increase in the rate of respiration and pulse. Body temperature may increase one degree immediately following such an attack.

Rabbits suffering from this condition refuse water and feed. Their fur is soiled and rough; that about the eyes is frequently moist and slightly matted. The areas of the chin and dewlap are moist because of drooling. There is partial paralysis of the musculature of the head and throat causing difficulty in swallowing.

The following experiment was set up, under field conditions to induce symptoms of spastic paralysis. Eighteen New Zealand White junior does and 2 junior bucks

were placed in newly constructed, California open style hutches. These rabbits were fed for twelve months on pelleted feed composed of 60 per cent leafy alfalfa hay meal and 40 per cent milled, mixed grains. Succulent green forage was never included in the diet. Within eleven months, all of the does had either kindled twice or had kindled once and were impregnated for the second time. During the twelve months this experiment was in operation, 2 does exhibited symptoms of spastic paralysis. One doe had just weaned a litter of eight young; the other was pregnant.

These does were held under close observation for forty-eight hours. During this period of observation, the symptoms became more pronounced. On the third day and on each of the next nine days, we administered, per orum, 5 cc. of cotton seed oil containing 3,389.83 international units of Vitamin A in each cubic centimeter. No other change was made in the regular diet. During the first forty-eight hours of treatment, the rabbits did not eat, drink, or exhibit any improvement. On the third day, both rabbits drank a small quantity of water when their heads were lifted to a normal position. During these 3 days, there was a scanty amount of dehydrated feces; some urine was voided. On the fourth day, the rabbits drank from a low crock without assistance and attempted to eat pelleted feed. This activity seemed to exhaust the rabbits causing them to sit in the characteristic position associated with the disease for long periods of time. On the afternoon of the fifth day, both rabbits ate some pelleted feed. After voluntary ingestion of food, the condition of each rabbit improved daily. At the end of the tenth day, administrations of the vitamin enriched cotton seed oil were discontinued. Each rabbit had received a total of 169,491.5 international units of vitamin A. These rabbits were returned to the producing herd. The impregnated doe kindled a litter of 8 young and successfully raised 7 to the weaning age of 56 days. The live weight of the litter at weaning age was

From Los Angeles Wildlife Disease Research Station, U. S. Department of the Interior Fish and Wildlife Service.

The author is indebted to the personnel of Work Projects Administration, Project Number 65-2-07-344 for assistance during the progress of this work.

32 lbs., 9 oz. The second doe was impregnated, kindled a litter of 12, and weaned a culled litter of 8. This second litter at weaning weighed 37 lbs., 4 oz.

Twelve days after these two cases developed in the experimental herd, a third doe revealed recognized symptoms of spastic paralysis. This doe had also just weaned a litter of young. When treated with vitamin-A enriched cotton seed oil, she responded in the same manner as did the other two.

The two bucks in this experimental herd never exhibited symptoms of spastic paralysis during the period they were under observation. The disease is much more prevalent in does than in bucks. Production places severe demands upon the does depleting their bodies of vital elements. Another factor to be considered is that the buck population in relation to that of the doe is one to ten. In affected herds, approximately 8 per cent of the adult animals may be stricken.

For several months before this experiment was conducted and during the time we were treating induced cases, spontaneous cases were developing in privately owned rabbitries. These cases were presented to this station for observation and diagnosis. The significant fact in each case history was that the rabbits had not eaten any succulent green feed for periods ranging from eight to eighteen months. Ten spontaneous cases, from private sources, were treated with vitamin-A enriched cotton seed oil; complete recovery resulted in each case. In 42 spontaneous cases receiving no treatment other than the addition of succulent green feed to the regular diet of pelleted feed, there was 100 per cent recovery. In a group of 78 spontaneous cases that were treated by administrations of either vitamin A in oil or by the addition of succulent green feed to the diet, we experienced a 9 per cent loss from terminal pneumonia; all other animals recovered. There was no appreciable difference in rate of recovery between cases treated with vitamin A and those fed succulent green feed.

Thus, our experiments indicate that effective treatments of spastic paralysis in domestic rabbits should include vitamin A. During the 3 years of our investigations on spastic paralysis, we have not witnessed a single case of recovery without this treatment. It is our opinion that mor-

tality is 100 per cent unless treatment is instigated.

The Billotine

The billotine is the name given to a special apparatus used to remove the upper beak of chickens for the prevention of cannibalism. It consists of a special blade attached to an electric soldering iron hung on a spring at a comfortable height (about 5½ ft.) to work with the hands while standing, and is pulled downward by a cable attached to a foot pedal, and returned to its upward position by the spring. The chick's beak is opened and slipped over the end of an iron pipe—tongue and lower beak inside, upper beak outside. The beak is cut off by pressing down with the foot. The stump of the beak is held in contact with the hot knife long enough to stop bleeding. The iron pipe is cooled by running water through it from a pail placed on one side of the operator, with a petcock adjusting the flow. Over 200 chickens per hour can be treated. It is stated that the operation diminished the habit of fighting and did not interfere with eating. The billotine was invented by W. E. Newlon, University of California, extension specialist in poultry.—*From The Country Gentleman.*

War Dog



—From American Legion Magazine

The "devil dog" of Bougainville, named Andy of the Marines, with Pfc. Robert E. Lansley, of Syracuse, N. Y. (left), and Lt. Clyde A. Henderson, of Brecksville, Ohio, on duty in the South Pacific theater.

Don't spread unfair criticism, Donald Nelson warns. It spreads contempt for our democracy and invites confusion among the people.

Influence of the Adrenal Cortex Hormones on Carbohydrate and Protein Metabolism

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WITH THE isolation and study of the physiological actions of the active principles of the adrenal cortex, the previously divergent schools of thought concerning the function of this gland became united. It has long been known that disturbances in electrolyte balance and in carbohydrate metabolism occur in clinical and in experimental adrenal insufficiency. Because of the fact that death from adrenal failure could be explained on the basis of either the profound disturbance in salt and water metabolism or the critical lowering of the blood sugar and depletion of liver glycogen, considerable debate took place in the literature concerning which of these functions of the adrenal gland was of primary importance. Long¹ stated in a recent review that the metabolic changes occurring in adrenal insufficiency and the well described effects of the adrenal cortex hormones on these metabolic processes have caused the acceptance of the view that the adrenal cortex, by means of two different types of hormones, participates in the control of (1) distribution of inorganic ions and the permeability of membranes, and (2) glucose formation and deposition of glycogen in the liver.

TYPES OF ADRENAL CORTX HORMONES

Thus far, eleven crystalline adrenal steroids have been isolated from the cortex.² An "amorphous fraction" which possesses biological activity remains after the crystalline hormones have been removed. The crystalline substances exhibit qualitative and quantitative differences in their effects. The two qualitative differences, one on electrolyte balance, the other on carbohydrate metabolism, serve as a means of classifying the crystalline substances under two headings.

According to Long,¹ those of the corticosterone series, characterized by the presence of an hydroxyl or carbonyl group at carbon eleven, control carbohydrate metabo-

lism as well as electrolyte balance and, because of their dual rôle, constitute the essential and characteristic hormones of the adrenal cortex. However, the effect on carbohydrate metabolism per unit volume of any of these crystalline compounds is considerably less than that of a unit volume of whole extract. The other group which includes the amorphous fraction is comprised of those steroids that effect salt and water balance only. Desoxycorticosterone, the only adrenal steroid that has been synthesized, heads this group. Although this substance, as stated by Long,¹ is not present in the adrenal cortex in significant amounts, its availability has led to an over-emphasis of its importance in the normal mechanism of action of the adrenal cortex.

PHYSIOLOGIC AND METABOLIC CHANGES IN ADRENAL INSUFFICIENCY

Among the most prominent physiologic changes characteristic of adrenal insufficiency are the disturbances in kidney function, membrane permeability, vascular tone, and capacity of the muscle for work. The two most striking metabolic disturbances are referable to mineral and carbohydrate metabolism. While the details in the mechanism of kidney function, membrane permeability, vascular tone, and muscle contractions are not thoroughly understood, the physiologic changes occurring in adrenal insufficiency may be interpreted in terms of the concurrent changes in the metabolism of minerals and carbohydrate. In order to correct all of these disturbances, it is important to administer adrenal cortex preparations that possess all of the activities of the essential and characteristic hormones.

KIDNEY FUNCTION

In adrenal insufficiency, the kidneys are incapable of retaining sodium chloride and removing potassium from the body. Largely through the work of Jimenez-Diaz,³ it

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was shown that these alterations in the electrolyte regulation of the kidneys were reflected by corresponding changes in electrolyte and water in the body fluids. This loss of sodium is the direct result of failure of the kidneys to form ammonia in the normal process of deamination of amino acids. This upsets the mechanism by which ammonia serves as the base for urinary excretion in place of sodium. Also, it was shown that the failure in deamination of amino acids in the kidneys prevents the formation of glucose. Since the kidneys as well as other essential organs of fasting animals must depend upon glucose derived from this source for energy requirements, any condition which interferes with this process will result in impairment of function.

MUSCLE ACTIVITY

Attempts to account for the decreased capacity of the muscles of adrenalectomized animals for vigorous activity on the basis of the chemical changes in the muscles have brought out some interesting findings. The outstanding changes are a loss of sodium and of chloride and a gain in water and in potassium. Examination of the carbohydrate level of the muscles showed that as long as the animals received adequate supplies of carbohydrate in the diet the muscle glycogen was not unduly depleted. When food is withdrawn muscle glycogen is much reduced.

That a correction in the altered electrolyte concentration in the skeletal muscle in adrenal insufficiency is not necessary for the return of work capacity of the muscles was demonstrated by Muntwyler *et al.*⁴ and Miller and Darrow.⁵ The former showed that the marked improvement that followed treatment with adrenal cortex extract may not be accompanied by a change in the concentration of electrolytes in the skeletal muscles, while the latter demonstrated that the muscle weakness in adrenal insufficiency is not specifically related to the increased potassium content of the muscles.

The chemical changes involved in muscular contraction are very complicated and not completely understood. However, it is known that in addition to an adequate blood supply the muscle requires a continuous supply of carbohydrate supplied by the liver not only for the contractile process but also for the resting phase. This neces-

sity of making glucose available to the muscle was shown by Ingle and Lukens⁶ who obtained an increase in work capacity of the muscles of adrenalectomized animals by injecting glucose intravenously. Members of the two groups of cortical hormones exert marked differences in their ability to increase muscular activity in adrenal insufficiency. Ingle^{7, 8} showed that the corticosterone type of adrenal compounds produced the greatest effect on rendering skeletal muscle capable of responding to long continued stimulation. Desoxycorticosterone showed little, if any, effect when given alone, but when administered along with a member of the corticosterone group, it caused an increase in muscle efficiency that surpassed the effort produced by an equal quantity of either compound given separately.

CARBOHYDRATE METABOLISM

Simultaneously with the increased excretion in sodium and retention of potassium in adrenal insufficiency, decreases in blood sugar and liver glycogen occur. This disturbance in carbohydrate metabolism has been shown by Lewis and associates⁹, Evans¹⁰, and others to be due to: (1) the increased oxidation of glucose in the peripheral tissues (muscles), (2) the failure of such essential organs as the liver and kidneys to synthesize glucose from tissue protein, amino acids, or lactic and pyruvic acids, and (3) the failure of the liver to convert glucose to glycogen.

Under basal conditions, adrenalectomized animals may be maintained by administration of sodium salts and glucose. However, the work capacity of such animals rapidly decreases when the animals are subjected to cold or exercise. Glucose administration alone in the absence of the cortical hormones and normal ability of the tissues to synthesize glucose from other sources is not capable of meeting the energy requirements. Under such conditions of stress which further increase the rate of oxidation of available carbohydrate, symptoms of hypoglycemia rapidly develop. Adrenal cortex extract and corticosterone and related compounds decrease the rate of carbohydrate oxidation^{11, 12} and restore blood sugar to normal levels. Desoxycorticosterone is not effective. The reduction in liver glycogen in adrenal insufficiency is

the end result of the inability of this tissue to convert glucose into glycogen. Adrenal cortex extract and the corticosterones bring about an increase in liver glycogen but not in compounds of the desoxycorticosterone type. It has been well established that the increase in glycogen does not take place at the expense of other carbohydrate stores because of the fact that under the influence of the essential adrenal cortex hormones the carbohydrate content of the entire body is increased. This change is effected by synthesizing the glycogen from noncarbohydrate precursors. This has been demonstrated by using fasted adrenalectomized animals and determining the urinary nitrogen after administering adrenal cortex hormone. Under such treatment, there occurred an increased excretion of nitrogen which was sufficiently great to indicate that all of the new carbohydrate that was formed was derived from protein. The liver tissue as well as the kidneys require the presence of the adrenal cortex carbohydrate controlling compounds to carry on the process of deamination. By this process, glucose forming carbon residues are formed from proteins or their split products, the amino acids.

SUMMARY

The crystalline adrenal cortex hormones have been divided into two groups: (1) the corticosterone type of substances which influence carbohydrate metabolism as well as electrolyte and water balance, and (2) the desoxycorticosterone type which affects only electrolyte and water metabolism.

A deficiency in these hormones, as far as the essential organic systems are concerned, leads to a decrease in the supply of energy to such a degree as to render (1) the kidneys incapable of maintaining electrolyte balance, (2) the muscles incapable of performing work, and (3) the liver incapable of performing those functions upon which normal carbohydrate metabolism depends.

The action of the cortical hormones on carbohydrate metabolism involves three processes: (1) the control of oxidation of glucose in the peripheral tissues (muscles), (2) the formation of glucose from protein, amino acids or their residues after deamination, and (3) storage of carbohydrate as glycogen in the liver.

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Fatal Case of Erysipeloid

Erysipeloid, the local erythema of man named before its nature was entirely understood, is not always the benign ailment described in medical literature. As pointed out by Van Es two years ago from observations made in Nebraska (*Research Bulletin 130, University of Nebraska, abstr. J.A.V.M.A. Dec. 1942*), the specific agent of swine erysipelas is capable of causing grave, prolonged, and even fatal illness. Lentz (*Vet. Extension Quart. Jan. 1944*) draws attention to the fatal case at the Philadelphia General Hospital which was reported in the *Journal of the American Medical Association* by Klauder, Kramer, and Nicolas. The attack lasted from the onset in April to a fatal end in October after having subsided from June to September.

The symptoms were weakness, anemia, and purpuric eruption with swelling and tenderness, shifting purpuric macules,

nephritis, enlargement of the heart and liver, and fever from 99 to 102 F.

Medical dictionaries, just off the press, still define erysipeloid as "a mild erythema caused by infection with dead animal matter."

Feline Virus Pneumonia

The saga of cat pathology was brought into the limelight and quite substantially uplifted the other day when the Department of Animal Pathology, Rockefeller Institute of Medical Research, announced* that feline distemper (alias nasal catarrh, cat enteritis, infectious coryza, coccidiosis, bronchopneumonia, *et al.*) is a specific virus disease, after having proved the point in faultless fashion. Another ailment was thus added to the column of demonstrable virus contagions of domesticated fauna. *Les comptes rendus* of Jean Verge and co-worker, announcing that discovery in 1928 (less definitely, however), was all but forgotten when the Rockefeller Institute work was critically analyzed in a three-column editorial† of the *Journal of the American Medical Association* as a quoteworthy achievement.

As small animal clinicians know, the disease in question is an acute, rarely fatal, respiratory disease of the domestic cat manifesting nasal and eye discharges, cough, sniffing, enteric trouble, accelerated breathing and occasionally, anterior lobe pneumonia, lasting a week or two. The Rockefeller scientist* identified the virus of this cat disease in serial passages up to twenty and demonstrated its livability as a pathogen from the fifth to the twentieth passage; found the isolated agent fatal to hamsters, young guinea pigs, and mice but less virulent for cats, rabbits, and adult guinea pigs; that it infected cats readily by contact; discovered that cats carry the virus one to two months after recovery; and that it confers an immunity against reinfection by way of the nasal mucosa, suggesting the presence of cytologic rather than humoral immune factors. Quoting: "The conclusion is drawn that

Baker's virus differs from all feline viruses previously described. Presumably it is not the only virus capable of producing nasal catarrh and nonlethal pneumonia in cats."

Coccidiosis in Chicks

When pullorum disease has taken its toll, coccidiosis steps into the scene. Birds up to 3 months of age take the brunt of the acute or cecal (bloody) form—the form caused by *Eimeria tenella*—while the more chronic or intestinal form attacks the older chicks. The poultry practitioner keeps close acquaintance with seven or more species of the genus *Eimeria* (Coccidium): *tenella*, *necatrix*, *maxima*, *mites*, *brunetti*, *hagani*, *praecox*, and *acervulina*. From the practitioner's point of approach, these are different names for the same thing. The differences among them are in their dimensions and the place in the intestinal tract which they are most likely to attack. This pathogen, in clinical work, is a parasite characterized by starting in life (for study) in the form of the cell called an oöcyst—a cell with a complex life cycle: oöcyst, sporocyst, sporozoite, trophozoite, schizont, merozoite, macrogamete, microgamete, and finally macrogamete to get back to the original or oöcyst stage. The oöcyst dimension runs from 16.2 by 15.5 μ for the smallest to 29.3 by 22.6 μ , according to Hagan. Grossly, the morphologic differences have little importance in clinical work.

Coccidiosis more nearly resembles chemical poisonings than any other infectious disease. The severity of the damage corresponds with the intake. Between the large dose that kills and the small dose that does little harm are the intermediate degrees of illness. The prophylaxis is simple: Do not let chicks scatter oöcysts. In the livability of oöcysts scattered about under the various degrees of exposure and the access of chick to them lies the whole problem. Non-irritating feed (milk) and certain medication are not frowned upon but depending upon them to the exclusion of sanitary measures based upon knowledge of the parasite's mode of life is not the good strategy.

Matériel won the Battle of Africa and it will win the Battle of Japan and the Battle of Europe, provided the home front does not renege.

*Baker, A. J.: Virus Pneumonia of Cats. *J. Exptl. Med.*, 79, (Feb. 1944): 159.

†Editorial: *J.A.V.M.A.*, 124, (April 15, 1944): 1134-1136.

Equine Encephalomyelitis (Eastern) in Brazil

During an epizootic of equine encephalomyelitis in the county of Pessanha, located in the central part of the state of Minas Geraes, Brazil, Lennette and Fox of the Service of Studies and Researches on Yellow Fever, in coöperation with the International Health Board of the Rockefeller Foundation and Brazilian Ministry of Health, found horses and mules with antibodies which neutralized the eastern strain of equine encephalomyelitis virus of the United States, contrary to results formerly reported for Argentine and Venezuelan virus or for a virus isolated in Brazilian horses by Carneiro in 1937. The conclusion drawn from the study was that the eastern strain of equine encephalomyelitis of North America occurs also in Brazil.—*From the Regular Correspondent to the Journal of the American Medical Association, March 11, 1944.*

Sulfadiazine Dermatitis

That sulfadiazine, in the generally approved dosage, is capable of causing grave reactions is shown in a recently published



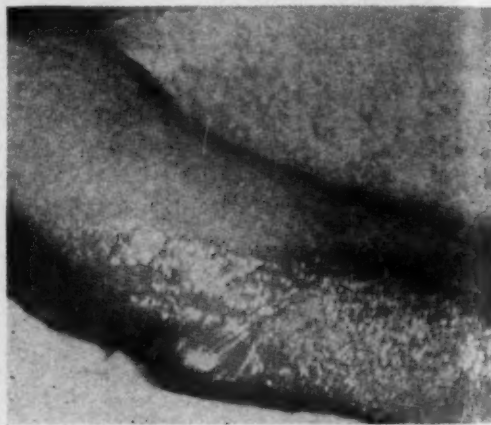
—Courtesy of Journal of the American Medical Ass'n.

Fig. 1—Appearance of patient just before height of the exfoliative dermatitis.

article in the *Journal of the American Medical Association*.* The victim was a

* From *J.A.M.A.*, April 1, 1944.

10-year-old boy hospitalized for an acute respiratory disease, whose case history runs the gamut of the usual acute exanthems of childhood, but who had never before been treated with sulfonamide drugs. The dosage that proved to be toxic was 1.5 Gm. followed with 0.5 Gm. four times daily,



—Courtesy of Journal of the American Medical Ass'n.

Fig. 2—Local condition of the skin of one arm.

both by mouth. The grave reaction began with a rash on the ninth and tenth days which covered the face and arms, and turned, overnight, into myriads of vesicles accompanied by a rise of temperature from 101.1 to 104.7 F. with acute, serious illness. Numerous blebs appeared on the neck, arms, and shoulders, together with severe conjunctivitis, ulcerative gingivostomatitis, encrusted lips, difficult and painful urination, and other reactions. The picture so closely resembled severe scalding that the lesions were treated as a burn. The case was intensively treated with morphine to control the lasting pain. Supportive treatment included a constant intravenous dextrose drip. To this was added ascorbic acid, thiamine, niacin, pooled plasma, and fresh whole citrated blood. The low point was reached on the fifth day when a fatal ending was expected, and recovery began on the twentieth day. The author records this as "an additional case of exfoliative dermatitis."

From the National Dairy Council comes the information that our wartime diet is improving the national health due, to a considerable extent, to an increase of the average daily milk products consumed.

NUTRITION

MATERIAL FURNISHED BY THE COMMITTEE ON NUTRITION

Niacin and Necrotic Enteritis in Swine

Reprinted from *Nutrition Reviews* (January 1944)

It has been estimated that, under normal conditions, 40 per cent of the pigs born each year in the United States die before they reach market size. Necrotic enteritis is one of the diseases which is responsible for large numbers of these deaths.

Necrotic enteritis, or so-called "necro", is a disease of young pigs. The first apparent symptom is "unthriftiness." The bristles and skin become rough, the skin finally becoming covered with small scabs which are particularly noticeable on the ears. The disease is characterized by diarrhea. The pigs become emaciated and anemic, and death will follow unless effective treatment is given. Autopsy reveals few internal changes in the earlier stages, but as the disease progresses, small white irregular spots appear on the serous coat of the large intestine. These are caused by the separation of the epithelium from the mucosa.

At the present time there is considerable difference of opinion as to the cause of this disease. Veterinarians have classed necrotic enteritis as a filth-borne disease, but this viewpoint has not been fully accepted.

More commonly, this disease is attributed to an invasion by the organism *Salmonella cholerae suis*, with perhaps other secondary invaders. There appears to be ample justification for the conclusion that this organism is involved in the syndrome, but the picture is somewhat complicated by the viewpoint of some workers that the nutrition of the pig is also involved.

The basis for this latter view dates back to the work of Chick and associates (*Biochem. J.* 32, (1938): 10) who discovered that severe deficiency symptoms occurred in pigs fed a diet composed large-

ly of maize and that the condition was corrected by the administration of niacin. The external symptoms occurring in these pigs were the same as those which have been described for necrotic enteritis. In 1938, Madison, Miller, and Keith (*Science* 89, (1939): 490) observed pigs under farm conditions with similar symptoms. The condition of these pigs was markedly improved, and death losses halted, by the administration of niacin. These workers, therefore, termed this disorder swine pellagra.

Subsequently, Davis, Freeman, and Madison (*Michigan Agric. Exper. Sta. Techn. Bull. No. 170* (1940)) published "The Relation of Nutrition to the Development of Necrotic Enteritis in Swine." These authors stated that their results indicate that necrotic enteritis of swine develops primarily as the result of nutritional deficiency, and is prevented and cured by niacin. They suggested that infectious necrotic enteritis is a secondary complication caused by the organism *S. cholerae suis* after the symptoms of niacin deficiency develop.

Neither has there been a general acceptance of this viewpoint. Breed (*J. Am. Vet. Med. Assn.* 100, (1942): 27) recognizes pig pellagra and another disease which he chooses to term salmonellosis, as two diseases with similar pathology of the digestive tract, the latter being infectious in character and the former due to niacin deficiency. He states that "pig pellagra is not a new disease of young swine, but rather an old malady, the scientific cause of which has been recognized." He warns that "this problem should be carefully studied by the veterinarian so that it will not be directed into the hands of the nutritionist."

This whole question has been of considerable interest to research workers as well as to veterinary practitioners. Fairbanks and Curzon (*North Am. Vet.* 21, (1940): 536) have reviewed the question and conclude that niacin deficiency may appear in pigs raised on the farm, and that necrotic enteritis, or a syndrome almost identical with it, appears frequently in swine on a ration low in or devoid of niacin.

Hastings (*North Am. Vet.* 21, (1940): 724) states that niacin appears to exert a definitely favorable influence on the subacute form of enteritis commonly called "necro," the curative value being almost unbelievable at times. However, the treatment with niacin is recognized to have limitations as a cure for the disease, especially in the later stages. It is at this point that the veterinarian is frequently called, the disease having progressed to the stage involving severe necrosis and profuse diarrhea. In many cases, before clinical symptoms appear, the intestinal tract has been severely damaged and foci of infection have occurred in other tissues and organs such as the lungs, kidneys, and liver.

Some veterinarians prefer to believe that nutritional factors are not involved in any way in infectious necrotic enteritis. Work testing this hypothesis has been reported by Edgington, Robison, Burroughs, and Bethke (*J. Am. Vet. Med. Assn.* 101, (1942): 103) and by Davis and Freeman (*Proc. Am. Soc. An. Prod.* p. 316 (1940)). Cultures of *S. cholerae suis* were fed to pigs to transmit the organism. Edgington *et al.* interpret their results as indicating that the protective value of niacin against infection, by this organism, was not sufficient to encourage its use as a specific preventive or curative measure, but recognize that the evaluation of the influence of nutritional factors upon this disease may not yet be clearly established. Davis and Freeman reported marked differences in the development of the disease in response to different dietary treatments. Liver feeding afforded the best protection, and niacin was effective to some extent, while dried bakers' yeast at the rate of 50 Gm. per day per pig gave no protection. They postulated that the protective action of these supplements is due to the nutrition of the pig rather than to a

specific action against the *S. cholerae suis* organism.

In a further report Davis, Hale, and Freeman (*J. Anim. Sci.* 2, (1943): 138) seek to differentiate between "swine pellagra," the term first used by Madison, Miller, and Keith, and "salmonellosis," a term they also prefer to infectious enteritis. They state that these two conditions may occur concurrently, or one may predispose the other.

The advent of sulfa drugs led to the use of sulfaguanidine in veterinary practice by Cameron (*Cornell Veterinarian* 32, (1942): 1), Kernkamp and Roepke (*Proc. Soc. Exptl. Biol. Med.* 50, (1942): 268), and Bornstein and Strauss (*Ibid.* 47, 112 (1941)). The success of the use of the sulfa drug by these workers led Davis, Hale and Freeman to administer sulfaguanidine to control any *Salmonella* infection, in the hope that under these conditions the pig might make better use of the niacin. The results indicated that sulfaguanidine was effective in protecting pigs from *S. cholerae suis*. Niacin, on the other hand, did not prevent the pigs from reacting to the *Salmonella*, but following the initial setback, it was effective in promoting rapid recovery and increased weight gains. These results were interpreted as substantiating previous observations that niacin is effective in preventing pig pellagra, and also in treating salmonellosis, in so far as it enables the pig to maintain its body defenses, but it is not a bacteriostatic or a bactericidal agent.

It is apparent that further work would be highly desirable in order to clarify the relationships of the factors involved in the cause, cure, and prevention of the disease. Differentiation between pig pellagra and necrotic enteritis seems logical, with the former possibly predisposing the latter infectious condition, or being the subacute stage of the same.

The relation of niacin and the occurrence of pig pellagra is not easy to understand. Chick and associates showed that a ration composed largely of corn may be deficient in niacin. This may not mean that all corn rations are thus deficient, since the fact stands that thousands of pigs are successfully raised on rations composed mostly of corn. Such pigs must obtain sufficient niacin from the corn or from some other source. Bacterial synthesis in the intestinal tract may provide this niacin, al-

though information on this point is lacking for the pig, and one might expect that the pig's ability in this respect would be limited.

Little is known of the pig's actual requirement for niacin. Hughes (*Proc. Am. Soc. Anim. Prod.*, (1939): 147) has suggested that 13.7 mg. of niacin per day per 100 lb. of body weight protected pigs from pellagra. The stated requirement usually exceeds this figure, and therapeutic doses of 50 to 100 and even 200 mg. per day per pig are often used.

The efficacy of some of the sulfa drugs for the treatment of the disease in its advanced stages is particularly striking. It would, therefore, appear that sulfa drug and niacin treatment would offer the best therapy for the disease in the necrotic stage. It remains to be seen whether pig feeds should be fortified with niacin as a preventive measure. It is possible that the inclusion of other B vitamins, in addition to niacin, would also be valuable for this purpose.

Single-Grain Ration for Dairy Cows

When commercial foodstuffs are scarce and difficult to obtain, as in the present war period, dairymen who have enough good legume hay and silage can obtain economical and abundant milk production by using a simple, home-grown grain ration, according to the U. S. Department of Agriculture. The home-grown grain ration may be only one grain, or it may be a mixture of several grains, but it is important that the roughage part of the ration be a good source of protein.

In a survey of experimental work, the Bureau of Dairy Industry found very few experiments reported in which a single-grain ration was fed over a long period. The results of a series of tests recently completed at three field stations of the Bureau (Mandan, N. Dak., Hannibal, Mo., and Woodward, Okla.) are, therefore, of especial importance at this time when the need for additional production of dairy products is so great. The Bureau's experiments, as well as others in which home-grown grains have been fed, indicate the importance of feeding plenty of good legume hay in order to supply enough protein.

The Wisconsin Experiment Station, for example, compared a simple grain ration of corn and oats with a mixture of corn, oats, linseed meal, and cottonseed meal. Their results show that when cows receive plenty of choice alfalfa hay with corn and oats there is no need to purchase expensive protein-rich concentrates to keep up good production.

At the Ohio Experiment Station two Holstein-Friesian cows produced well on a grain ration consisting of corn only, when fed along with alfalfa hay. In thirteen months on this ration, one cow produced 11,040 lb. of milk and 382 lb. of butterfat. The other cow produced, in twelve months, 11,276 lb. of milk and 351 lb. of butterfat.

From its experiments at the three field stations, the Bureau of Dairy Industry concluded that if cows have an opportunity to consume as much good legume hay and silage as they like, it makes little difference whether the nutrients they require are obtained from a single grain or a mixture of several grains and grain by-products.

The single-grain rations fed at the three field stations were products locally grown—ground barley at Mandan, ground yellow corn at Hannibal, and ground kafir at Woodward. In each case, the comparison was with rations consisting of four to six different grains, by-products, and high-protein concentrates. The rations were all fed with liberal quantities of high-quality legume hay and silage.

The cows receiving the single-grain ration produced on the average 12,347 lb. of milk and 505 lb. of butterfat, which was 93 per cent as much milk and 95 per cent as much butterfat as was produced by the cows on the mixed-grain ration. Although the results for individual cows were not consistent, the difference in production was considered as probably not significant. The cost of the feed required to produce a pound of butterfat averaged slightly less for the single-grain ration than for the mixed-grain ration.—*USDA Release, Apr. 8, 1944.*

"Vitamin heightens Learning Ability," is the title of an article in *Science Digest*. The vitamin is thiamin and the author is R. F. Farrel, Teachers College, N. Y. The conclusion is based on trials on 104 scholars from 4 to 20 years old.

EDITORIAL

Inventions of Veterinarians at Work

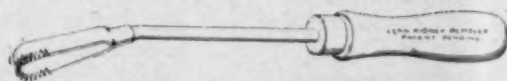
THE TWO articles on poultry-meat inspection published in the April, 1944, issue, namely, "Poultry Meat Inspection," by Edward M. Lynn, federal inspector of eviscerated poultry, and "Army Inspection of Eviscerated Poultry," by Lt. Robert E. Savage of the Veterinary Corps, U.S. Army, together with the obvious advan-

tion; to the modern method of dehairing abattoir hogs by a chemical process, preconized and installed by Veterinarian L. V. Hardy, while working as a meat inspector in an abattoir of the Middlewest (see page 346), and who is now federal inspector-in-charge of meat inspection at Newark, New Jersey; the sensational method of reducing



—Drawn by E. M. Lynn

Fig. 1—Lynn's tined tenaculum for removing the lungs in eviscerating poultry.



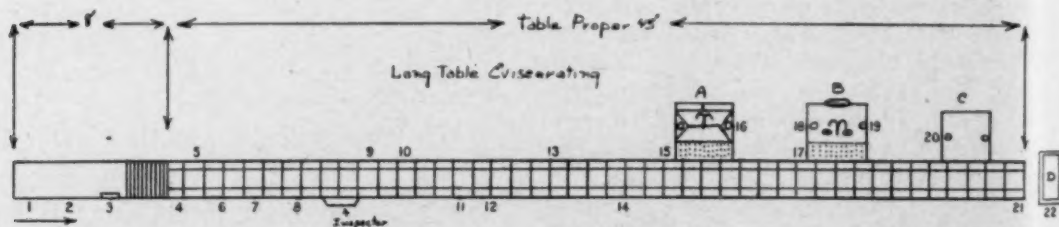
—Drawn by E. M. Lynn

Fig. 2—Lynn's saw-toothed tenaculum for removing the kidneys.

tage of subjecting a larger percentage of market poultry to critical inspection in the interest of public health and the poultry industry itself, bring to mind inventions of veterinarians at work that have revolutionized customary procedures of general concern outside of their own field, inventions apart from the work of veterinary science *per se*. In writing of this subject, the mind turns to the invention of the pneumatic tire by Veterinarian Dunlap, which revolutionized highway transporta-

and fixing fractures invented by Veterinarian Otto Stader, Ardmore, Pa., while at work several years ago in his small animal hospital at Elgin, Illinois; and the streamlining of eviscerated poultry inspection by Veterinarian Edward M. Lynn, Chicago, signalized, herewith, for the first time in veterinary literature.

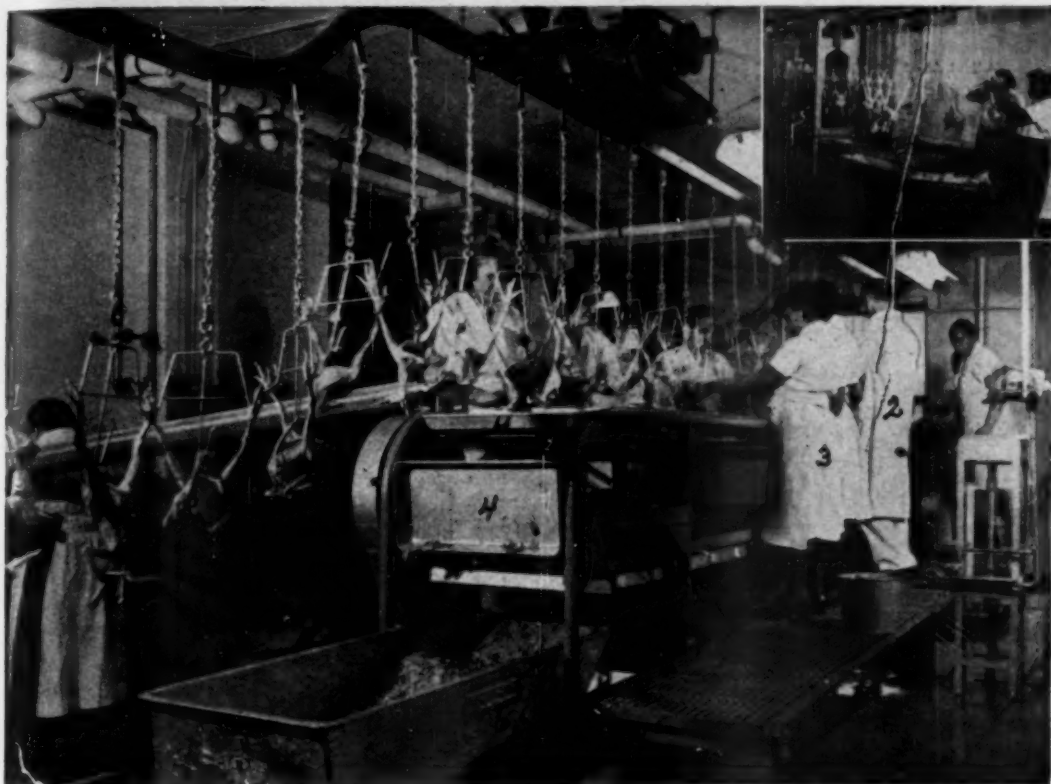
Prompted to look around for suggestions as to how poultry-meat inspection could be expanded practically and economically, it was found on inquiry at one of the larger



—Drawn by E. M. Lynn

Fig. 3—Schema of a work table (line) 45 feet long, for streamlining poultry-meat inspection. The veterinary inspector works between 8 and 9.

Legend: 1 and 2, pinners; 3, singeing; 4, oil bag cutter; 5, cropper; 6, opener; 7, viscera puller; 8, lung and ovary remover; 9, saw (on the table); 10, neck trimmer; 11 and 12, kidney removers; 13, gizzard separator; 14, cleaner; 15, liver and heart clipper; 16, liver and heart trimmer and washer; 17, gizzard cutter; 18 and 19, gizzard openers and cleaners; 20, final cleaner; 21, house inspector; 22, washer.



—Photo by Richard Wilcox Co.

Fig. 4—Streamlined equipment with chickens hanging instead of lying in moving pans.

Legend: Eviscerator; 2, the veterinary inspector; 3, two removers of lungs and kidneys; 4, moving pans dumping viscera into the vat (6); 5, eviscerated and inspected chickens on the way to line (7) shown in the inset, where the carcasses are on the last lap to the packers.

plants that the use of Lynn's lung and kidney remover (fig. 1 and 2) and the working equipment shown in the diagram (fig. 3) saves 40 per cent in labor, increases production up to 50 per cent, and at the same time yields a cleaner and more sanitary product in a shorter time. As a consequence, we are informed that the old style eviscerating line with its large group of workers is being remodeled and new ones installed throughout the country, with a promising prospect that more and more poultry meat will be submitted to critical inspection as to its wholesomeness at a much lower cost. In short, this practical equipment, brought about by a veterinarian at work, is revolutionizing poultry-meat inspection at the eviscerating plants in a manner comparable to Hardy's method of chemical depilation of hogs. On the bases of both fact and importance, and to establish priority and credit for these veteri-

narians at work, the propriety of attaching their names to their respective inventions could hardly be questioned. The veterinary profession will receive scant credit for these (and other) inventions if the inventors' names are not inseparably attached to them, and the time to establish credit is before it is too late, and thereby avoid controversy.

Racing Commissions and Jockey Clubs

That any sport or amusement running a box office ought to keep its skirts as white as the driven snow is not debatable, but that a private jury should be the sole and final judge of the linen is open to argument, in this "land of the free and home of the brave." We're thinking of horse racing where, on the one hand, ringin', dopin', fixin', and schemin' can sneak in and break

down the morale-building intentions of the holiest guardians and where, on the other hand, the verdicts of the watchers may not always be odorless. The temptation to sin can't be removed, as of the human element, in the chase for gain. So, we think the contention that the courts should be kept out of the controversies growing out of "ruling off" trainers, owners, jockeys, and horses is not good sportsmanship. The right to appeal to "a jury of his peers" oughtn't be abolished in the sport of kings. Few Americans will underwrite the notion that "Racing authorities should have the privilege of throwing out a few citizens just because they don't look good in the picture."*

*Joe H. Palmer in the *Blood Horse*, Apr. 1, 1944.

More About Chemical Depilation of Hog Carcasses

The May, 1944, issue of the JOURNAL carried an illustrated article on a method, used in connection with the removal of hair from slaughtered hogs, which employs a rosin-oil compound. Both this article and the original reference to chemical depilation, taken from *Science Digest* and published on page 227 of the April JOURNAL, gave the impression, perhaps, that the scalding tub and dehairing machine have been or may be relegated to the scrap heap by the rosin-oil method. The fact of the matter is that the latter method is *an aid* in obtaining an acceptably dehaired and clean carcass and, where used, replaces the laborious shaving and cleaning process done by hand. The carcass is taken through the usual procedure of scalding and dehairing, then the compound is used to remove the remaining hair and scurf, followed by a light singe to take care of the fuzz or fine hair. To use the rosin-oil mixture for the purpose of removing all hair from the hog carcass would complicate the process of reclaiming the compound, and, as of today, make the cost prohibitive and impractical.

Without belaboring a subject beyond its actual importance, it seems of interest to record something of a method little known in the veterinary profession outside the branch engaged in meat inspection. Also, to keep history of this useful innovation

straight and to give credit where it may be due, it is noted that the idea of dipping the entire carcass in a rosin-oil compound was advanced to the Tobin Packing Company, Inc., of Fort Dodge, Iowa, by Dr. L. V. Hardy, while on duty at the plant as inspector in charge. Resinous mixtures had previously been tried and applied by brushing and spraying them on hog carcasses.

Dr. Hardy read a paper entitled, "The Use of Rosin Mixture as an Aid in Dehairing and Cleaning Hog Carcasses" before a meeting of inspectors in charge of federal meat inspection in Chicago, June 7, 1938. The new dipping method was cited as developed "within the past two years" which would set the start in 1936. The spray and brush methods of applying depilation compounds, especially on localized areas of carcasses, are still employed by some packers. Naturally, there are exponents and arguments for all methods. A leading article on the dipping method appeared in the *National Provisioner* for Sept. 11, 1937, in addition to the 1943 article mentioned in our last issue.

Suggests Uniform Idiom for Science

Speaking particularly for biological research, Prof. Richard Wasicky, University of São Paulo, Brazil, (*Science*, Apr. 14, 1944) makes the logical suggestion that a uniform idiom be established for the whole world of science and proposes the American Association for the Advancement of Science as the medium through which to achieve that desirable result. The usual abstracts from a foreign scientific article or the summaries now customarily appended thereto for the convenience of the foreign reader (quoting) "do not reproduce exactly important details of determined reports," to which we would add that they are more newsy than instructive to foreign workers in the same field, because, inescapably, abstractors and translators lack complete understanding of idiomatic usage in the languages concerned. Latin would have the advantage in not hurting the national feeling of any people; Esperanto, language of the idealist, would not give practical results. English would be better since its grammar, its idioms, and its complete terminology could be divulged all over the

world, notwithstanding that other languages may lay claim to the same features.

A part of the proposal made by Professor Wasicky is for a uniform scientific nomenclature. Research workers should lead in bringing about this important reform in international understanding, for, once adopted by them, the extension would become world wide in other branches of man's undertakings.

Among scientists of the upper frame, the proposal is not likely to go unheeded for the uncontradictable reason that he who transgresses beyond the bournes of his own language immediately finds himself enmeshed in the idiopathy of both the author's and his language, particularly the former. Even if one can master the idioms of a given language, one can hardly be expected to encompass the linguistic whims of all the authors. They are too diverse, too numerous, too baffling, too inexact for the advancement of science. Hence, the occasional blue penciling of certain idioms in AVMA publications. They go to many countries for transliteration.

Keep Neat and Tidy

W. G. Blake, D.V.M., Greeley, Colo., writes: "We ought to try to impress our doctors that neatness and cleanliness is vitally necessary in the practice of preventive veterinary medicine, so let's carry it out." From *Bio-Chemic Review* he quotes: . . . "that there is nothing that improves the welfare of the practitioner as much as neat personal appearance . . . that there is no excuse for any practitioner having a dirtier or more insanitary office than many of the barns to which he is called." Being moved and seconded, all in favor say aye. Motion carried, and it is so ordered.

Corrigendum

The May, 1944, issue of the JOURNAL (p. 286) shows 71 cases of equine encephalomyelitis to have occurred in Clinton County, Iowa, during 1943, all of which were ten days or more after the second dose of vaccine had been received. The facts are only one case developed in vaccinated animals,

National Dog Week

According to the announcement of Secretary Harry Miller, 3323 Michigan Boulevard, Chicago, National Dog Week for 1944 will be observed September 17-23. The general chairman is Capt. Will Judy, editor



—From American Legion Magazine

Wounded in action on Bougainville, Caesar, marine-trained K9 Corps member, saved the life of his leatherneck master.

of *Dog World*. On the honorary committee are Bob Becker, outdoor editor of the *Chicago Tribune*, Sidney Coleman, president of the American Humane Society, W. A. Young, director of The Anti-Cruelty Society, Charles W. Bower, president of the American Veterinary Medical Association, and other prominent figures of dogdom. A big 1944 National Dog Week is planned. "In War, in Peace, 'Man's Best Friend'" is the slogan.

National Dog Week was founded by Editor Will Judy of *Dog World* sixteen years ago (1928) as an educational, non-profit movement aiming to give the dog and the owners of dogs a break among all classes of people. Better dogs, better homes for dogs, better handling of strays, and better dog laws are a few of the many objectives.

War Bonds are the best advertised product of all history and the advertising hasn't cost a cent because the publishers of magazines and newspapers are backing the war effort with "all they have" and "with what it takes" to put a stop to the atrocities of the enemy.

CURRENT LITERATURE

ABSTRACTS

Human Brucellosis in Spain

The incidence of brucellosis is higher than that reported in the literature. In the last few years, 739 cases were received at the Hospital del Rey alone. Laboratory diagnoses were made. The skin test was positive in 97.1 per cent of the cases checked against serogglutination reactions. The specificity of the tests was significantly high. Agglutination titers of 1:200 or higher were absolutely specific, although *Brucella* organisms were present in only 55.7 per cent in a group of 666 cases. If titers of 1:50 or higher are to be considered significant, the agglutination test was positive in 91.2 per cent of the cases. Hemoculture which was positive in 64 per cent of 529 cases of brucellosis is impractical being delicate and difficult, and many times the growth of the organisms is slow.—[A. M. Vallejo and J. F. Egea: *Diagnosis of Brucellosis*. *Medicina, Madrid*, 11, (Nov. 1943): 317-396 *Abstr. J.A.M.A.* 124, (March 4, 1944): 673.]

Sodium Chlorate Not Harmful to Soil Microflora

Sodium chlorate is widely and successfully used to destroy weeds. [It has considerable importance in veterinary medicine as a poison to livestock, especially when salt-hungry stock have access to it in bulk. McCullough (*J.A.V. M.A.*, Dec. 1939) establishing its toxicity in chickens and sheep, and reporting a toxic accident in cattle having access to the chemical in drums, does not discourage its use as a weed killer in specified quantities per square rod.]

The present study, however, concerns only the possible harm sodium chlorate may do to soil microflora when used to destroy weeds. The trials, made in the laboratory and field, led to the conclusion that sodium chlorate in moderate concentration does not directly effect the microflora of soil: spores of *Penicillium*, *Aspergillus*, *Fusarium*, and certain bacteria, but it sterilizes the soil of higher plant life. The chemical is reduced in the presence of soil microorganisms, the rate of reduction increasing with microbial activity under poor aeration, a condition which may change suddenly and greatly alter the results. Sodium chlorate as

a weed killer is more effective in the fall than in the season of warmth and moisture and better on poor than on fertile soils. The experiments explain the reason for these favorable differences.—[Russell T. Nelson, *Minnesota Agricultural Experiment Station: "Studies of Microbial Activity, Chlorate Reduction, and Chlorate Toxicity in Soils Treated with Sodium Chlorate."* *J. Agric. Res.*, 68, (March 1, 1944): 221-237.]

The Dynamics of Antibiotics

Antibiotic substances (penicillin, *et al.*) are antimicrobial agents extracted from fungi, yeasts, and bacteria, chemically and biologically distinct from the usual germicides and have primarily a bacteriostatic action which is quite selective. Some are gram-positive, some gram-negative antiseptics, others act against both. The individuals of the group vary in chemical nature, in their toxicity, and in their mode of action. They vary greatly in their resistance to physical agencies (heat, light, cold, etc.) and in the process of production. Their source is one of four groups of organisms:

- 1) Nonspore-forming bacteria comprising *Pseudomonas aeruginosa* and others.
- 2) Spore-forming bacteria including *Bacillus brevis*, *Bacillus mesentericus*, and *Bacillus mycoides*.
- 3) Fungi, especially of the genera *Penicillium*, and *Aspergillus*.
- 4) Actinomycetes of the aerial mycelium producing types of the genus *Streptomyces*.

The mode of action consists of interfering with cell multiplication, accompanied with marked effect on certain metabolic processes. They prevent cell division and also interfere with the bacterial nutrition by competing for enzymes which bacteria need for their propagation. Another action described is the inhibiting of cellular oxidation of nitrogenous compounds.

The production of antibiotics has been signalized as the "domestication of microbes" for use in combatting diseases of man, animals, and plants. It is a new field of research with unknown possibilities—perhaps astonishing possibilities for medicine and agriculture.—[Selman A. Waksman; *Antibiotic Substances, Production by Microorganisms—Nature and Mode of Action*. *Am. J. Pub. Health*, 34, (April, 1944): 358-363.]

Fatal Encephalitis Due to Venezuelan Virus of Equine Encephalomyelitis

In the summer of 1943, during an epizootic of encephalomyelitis among horses and mules in Trinidad, there came to light a human case that was fatal on Aug. 22, 1943. Major R. T. Gilyard, V.C., U.S. Army, on duty in Venezuela, sent via air mail representative specimens of the victim's brain tissue to the laboratory of the Army Veterinary School, Army Medical Center, Washington, D. C., and later, similar specimens from donkeys, horses and mules that had died of the disease. Suspensions of these specimens, including the human one, were fatal to Swiss mice in from three to eight days. Cross-immunity studies of the isolated viruses confirmed the existence of three strains of equine encephalomyelitis (eastern, western, Venezuelan) in the Western Hemisphere and that all three are pathogenic for man. This was the first human case from the Venezuelan strain that was naturally acquired. Ten nonfatal cases in laboratory workers, however, are known to have occurred.—[Randall, Col. Raymond, V.C., U. S. Army, and Mills, Capt. John W., V.C., U. S. Army: "Fatal Encephalitis in Man Due to Venezuelan Equine Encephalomyelitis Virus in Trinidad." *Science*, 99, (March, 1944):225-226.]

BOOKS

Virus Diseases of Man, Animals and Plants

The sum of usable knowledge on virus diseases has brought human, veterinary, and plant pathologists into the same audience to study the tormenting agencies of living things, let us say comparative medicine. No single agency has done as much as the so-called filtrable microbes to bring pathologists into the same communion, under the same roof. Viruses have made these three musketeers "souls with but a single thought, hearts that beat as one," despite their serene independence of former times. Morbidity is just that whether it strikes man, animal or plant, and consequentially, he who would venture into that field of knowledge finds himself reading the same books and handling the same material. While the development of bacteriology (literally speaking) opened the way to a broader conception of disease, there has always been considerable disappointment in the bournes thrown around pathology in the literature and schools, each branch attempting to advance independently of the others. Although the surface of the subject has hardly been scratched, the modern pathologist finds himself searching the potato patch, the barnyard, and the home for usable knowl-

edge anent the somewhat invisible pathogens looming in the offing of his curricular field.

The value of this book besides its well organized text lies in its title—"Virus Diseases of Man, Animals, and Plants"—which breaks down the barrier of narrow incarcerated pathology of the bacteriologists and brings "comparative morbidity" into the open forum. Although volumes have been written about the so-called viruses, few have ever given as comprehensive a definition of the word (as now used) as does the author of this book. The "virus" of 1944 medicine cannot be defined in a few words. It has definite and far-reaching specifications, beyond which there are unknown properties to be disclosed. They are living things—bacteria—that "possess great capacity for variation," that cause typical disease in unbroken series, and that form specific antibodies among other actions which qualify them for a place among the living. Besides their biological nature, chemistry, dimensions, cultivation, pathogenesis, natural and acquired immunity, and epidemiology, the specific viruses of man, domestic mammals, birds and plants are described. The importance of this book to veterinarians is seen in the 21 diseases of animals included.

The list of virus diseases of animals speaks for itself as to the value of this book in the practice of veterinary medicine, notwithstanding that in some instances (e.g., canine distemper and encephalomyelitis) the author's conception does not tally with well established doctrines, and practices.

The references on these two diseases are too old for a scientific book dated 1944. Quoting Puntoni (1924) and Dunkin and Laidlaw (1928) on canine distemper and European authors on encephalomyelitis of horses as far back as 1925 and American authors no later than 1931 plus failing to mention chick-embryo vaccination instead of vaccination with brain substance, leaves much to be said about these two virus diseases of animals.—[*Virus Diseases of Man, Animals and Plants*. By Gustav Zeiffert. 332 pages. Cloth. Philosophical Library, New York. 1944. Price, \$5.00.]

Chemistry of Synthetic Substances

This is a booklet that sums up the latest research in the chemistry of synthetic substances with the expressed intention of satisfying the workers in science and industry who want a competent treatise covering that rapidly developing field. In other words, a chemistry of macromolecular organic substances which, in so far as high molecular matter is concerned, has been treated in the literature only in respect to technical applica-

tion. The demands for the synthesis of many macromolecular compounds have broadened the range of chemical problems faster than the chemist has been able to solve them. Research in the production of synthetic substances and students of that type of work should find this work of great value. It is translated from German.—[Dr. Emil Dreher, *Ludwigshafen am Rhein: The Chemistry of Synthetic Substances*. Translated by Marion Lee Taylor. 103 pages. Cloth. The Philosophical Library, New York. 1943. Price, \$3.00.]

Laboratory Methods of the U. S. Army

In a country's military structure, "methods" are kept as perfectly as is humanly possible; in the Medical Department, such methods are a matter of course. The saving of life and limbs and preserving health among soldiers can be accomplished in the highest degree only through methods drawn from the upper levels of medical knowledge. There is no compromise with low standards nor with guess work in the Army. A laboratory manual built up for guidance of the different corps of the Medical Department is, therefore, certain to contain tested directives of known reliability, not only for the elaborate general hospital where nothing in modern equipment, matériel, and technicians is lacking, but also for the small mobile unit back of the jungle fighters.

The editors organize the material of 27 contributors on permanent or temporary duty in the Army into one of the most noteworthy books on the subject ever published. The work has 47 chapters divided into the following 11 parts:

Clinical Pathology	Protozoölogy
Mycology	Helminthology
Rickettsiae and	Pathology
Filterable Viruses	Entomology
Chemistry	Special Veterinary
Bacteriology	Laboratory Methods
Statistical Methods	

Col. Raymond Randall, V.C., U.S.A., director of the Army Veterinary School, describes the special laboratory methods pursued in the diagnosis and handling of:

Actinimycosis	Anthrax
Blackleg	Malignant Edema
Glanders	Equine Infectious
Bovine Brucellosis	Abortion
Ulcerative	Equine Virus Abortion
Lymphangitis	Epizootic Lymphangitis
Mange	Ringworm
Trypanosomiasis	Piroplasmosis
Equine Filariasis	Rabies
Canine Filariasis	Canine Distemper

Thanks are extended to Brig. Gen. R. A. Kelser, director of the Veterinary Division for "advice and assistance." The book is dedicated to George M. Sternberg, eminent American bacteriologist, who was Surgeon General of the Army during the spectacular '90's, when D. E. Salmon, Theobald Smith, V. A. Moore, Cooper Curtice, Leonard Pearson, James Law and others were making historic discoveries in the veterinary field.

This book is a thorough dissection of the subject and besides being a necessary guide for officers of the Medical Department of the Army, it is highly academic in information concerning the health problems of mobilized millions of the civilian populations exposed to the hazards of a war of unprecedented extent, and of the intricate scientific techniques employed to handle them. The chapters on entomology, helminthology, and animal pathology contain knowledge of outstanding importance to the veterinary profession. You'll like this book and you'll learn a lot from it.—[*Laboratory Methods of the U.S. Army*. Edited by James Stevens, Brigadier General, U.S.A., Chief of Preventive Medicine Service, Office of the Surgeon General, U.S.A. and Cleon J. Gentzkow, Colonel, Medical Corps, Commanding Officer, Deshon General Hospital. 823 pages. 103 engravings. 8 color plates. Cloth. Lea & Febiger, Philadelphia. 1944. Price, \$7.50].

Annual Report of Montana Livestock Sanitary Board

It's a duty to tell "what's doing" in livestock sanitary work in the stretch on the map called Montana for here is one of the states where the doctrine, "veterinary medicine for veterinarians" is the accepted order. Although the livestock sanitary board is a stockman's organization, as it should be, its secretary and executive officer is W. J. Butler, a veterinarian who is not shifted with every political breeze, hard as the said breezes do blow in that part of American geography. But what is also noteworthy is the grasp this third largest state retains on livestock diseases. "Conditions were never better," the report says. More hogs and more cattle than ever are turning plant life into animal protein, and although the report shows a slight decline in the number of sheep, Montana is doing more than its share in preventing the American people from declining to the status of graminaceous populations. In short, the health of a vast animal possession is wisely guarded. From none to negligible with everything under control about boils down the story of animal diseases in Montana.—[*Report of the Montana Livestock Sanitary Board—Dec. 1, 1942 to Nov. 30, 1943—Edited by Dr. W. J. Butler, Secretary and Executive Officer*. 20 pages with tabulated material appended.]

THE NEWS

Program of Eighty-First Annual Meeting to Stress Important Problems of Veterinary Practitioners

The program of the third wartime meeting of the Association is rapidly taking form for three full days of sessions beginning on Tuesday morning, August 22, and concluding on Thursday afternoon, August 24, 1944. All sessions will be held at the Palmer House, Chicago.

LOCAL ORGANIZATION

The Committee on Local Arrangements is organized as follows:

General Chairman: H. Preston Hoskins, Evanston.

General Secretary: J. G. Hardenbergh, Chicago.

Committee Chairmen:

Public relations—W. A. Young, Chicago.

Alumni meetings—O. Norling-Christensen, Wilmette.

Banquet—C. N. Bramer, Evanston.

President's reception and dance—E. C. Khuen, Evanston.

Motion pictures—C. B. Krone, LaGrange.

Commercial exhibits—E. E. Sweebe, North Chicago.

Women's Auxiliary activities—Mrs. C. L. Miller, Oak Park.

THE PROGRAM

The general outline of the program is given below. There are two pre-convention days for meetings of the Board of Governors, Executive Board and committees, with the first session of the House of Representatives on Monday night, August 21, preceding the official opening on August 22. The night sessions of the House are necessary so as to avoid conflict with the literary program and other events.

There will be five general sessions in addition to the opening session on Tuesday morning. The latter will include the addresses of the president and others, the presentation of awards and certificates and other ceremonies which give this event color and significance.

Sectional meetings as such will not be held; instead, the section officers (committee on program) have arranged papers and panel discussions on topics from their respective fields, all of which will be presented at general sessions.

The Committee on Program is as follows:

F. H. Suits, Odessa, Mo., chairman, and Paul V. Neuzil, Blairstown, Iowa, secretary, General Practice.

L. D. Frederick, Chicago, Ill., chairman, and W. T. Spencer, Omaha, Nebr., secretary, Sanitary Science and Food Hygiene.

Cecil Elder, Columbia, Mo., chairman, and Robert Graham, Urbana, Ill., secretary, Research.

John H. Gillman, Memphis, Tenn., chairman, and Charles C. Rife, Atlanta, Ga., secretary, Small Animals.

E. M. Dickinson, Corvallis, Ore., chairman, and B. S. Pomeroy, St. Paul, Minn., secretary, Poultry.

E. E. Wegner, Pullman, Wash., chairman, and J. F. Bullard, Lafayette, Ind., secretary, Surgery and Obstetrics.

J. G. Hardenbergh, chairman *ex-officio*.

MOTION PICTURES

A special selection of motion picture films which have had few if any previous showings to veterinary audiences is being made. These demonstrations or "clinical depictions" will be given at various times, some preceding and some following the papers and discussions. Local members of the Special Committee on Motion Picture Library are assisting in these arrangements and one or more films which have been presented to the Association will have their première at this meeting.

EXHIBITS

After a one-year interlude, commercial exhibits will return as a feature of the meeting. These will be housed in the Exhibition Hall of the Palmer House. As evidence of the interest of commercial houses who supply the professional needs of veterinarians is the fact that 90 per cent of the exhibit space offered was reserved within a few days after announcements were mailed and all space has now been sold.

ALUMNI MEETINGS

A special effort will be made to provide facilities for those alumni groups which ordinarily plan for meetings during the AVMA convention. These meetings are scheduled for

6 p.m. on Tuesday, August 22, and advance arrangements will be made for alumni organizations which want to hold dinner sessions.

HOTEL RESERVATIONS

Members and others who are planning to attend the eighty-first annual meeting are urged to make hotel reservations at once. The Palmer House has set aside a block of rooms for AVMA registrants but all hotel space in Chicago is in demand these days and "confirmed" reservations are necessary at the leading hotels.

TRANSPORTATION

According to current rules of the Office of Defense Transportation, reservations for Pullman space on the railroads cannot be made more than thirty days in advance. Veterinarians are warned of the necessity for making reservations for transportation at the earliest possible moment in relation to their plans for the trip. The entire trip should be planned so as to secure reservations coming to Chicago and returning home. Transportation out of Chicago cannot be obtained on short notice; difficulties will be avoided if return transportation is purchased before leaving home.

AFFILIATED MEETINGS

Several organization meetings and conferences will be held during the week of the convention.

The Women's Auxiliary will hold its annual meeting following the luncheon on Wednesday, August 23.

The American Animal Hospital Association will hold a dinner and business meeting on Thursday evening, August 24. The annual meeting and one-day program is scheduled for Friday, August 25, which will be open to all veterinarians who desire to attend. Timely problems of small animal practice in wartime will be discussed. Dr. J. V. Lacroix, Evanston, Ill. is in charge of local arrangements for this meeting.

A conference of State Veterinary Chairmen and other veterinary members of the Procurement and Assignment Service will probably be scheduled during the week.

Officers of any organizations which customarily hold meetings during the AVMA convention are requested to notify Executive Secretary Hardenbergh of their plans this year.

General Plan of Program — 1944 Annual Meeting

	SUNDAY, AUG. 20	MONDAY, AUG. 21	TUESDAY, AUG. 22	WEDNESDAY, AUG. 23	THURSDAY, AUG. 24
A. M.	Board of Governors. Committee Sessions.	Executive Board. Committee Sessions.	Registration. Opening Session.	Motion pictures. General Session (Papers and Panel Discussions).	Motion Pictures. General Session (Papers and Panel Discussions). Breakfast Party for Women.
			Luncheon for Delegates of Junior AVMA Chapters.	Women's Auxiliary: Luncheon and Annual Meeting.	
P. M.	Board of Governors. Committee Sessions.	Registration. Executive Board. Committee Sessions.	Motion Pictures. General Session (Papers and Panel Discussions). Nomination of Officers. Informal Reception, Women's Auxiliary.	Motion Pictures. General Session (Papers and Panel Discussions). Motion Pictures.	Motion Pictures. General Session (Papers and Panel Discussions). Installation of Officers. Adjournment.
			Alumni Dinners and Meetings.		
NIGHT		House of Representatives, first session.	House of Representatives, second session.	Annual Banquet. Entertainment, President's Reception and Dance.	

Proposed Amendments to Administrative By-Laws

An amendment relative to the reorganization of the Committee on Education has been submitted in accordance with section 3, article XIII, of the Administrative By-Laws, which reads:

Section 3.—Excepting sections affecting the corporate officers provided in the constitution, the administrative by-laws may be permanently amended at any annual session by submitting, in writing, notice thereof to all the membership ninety days prior to the annual session at which final action is to be taken. Publication of proposed amendments in three consecutive issues of the JOURNAL shall be regarded as due notification to the members.

Proposal: Amend article XII, section 1.—“2. Committee on Education” so that it will read as follows:

a) Personnel.—This committee shall consist of seven members appointed by the president at the rate of one member per year, each to serve for a term of seven years. One member of the committee shall be appointed from each of the following branches of veterinary science; (1) teaching staff of a veterinary college accredited by the association, (2) federal veterinary service, (3) United States Army Veterinary Corps, (4) large animal practice, (5) small animal practice, (6) fulltime research in an educational institution of higher learning, (7) public health service. This committee shall elect a chairman and a secretary who will each serve for two years, or until their successors are elected and qualified. In the event of a vacancy resulting from death, resignation or disqualification from any cause, the president shall fill such vacancy by appointment of a successor from the same classification to serve the unexpired term.

b) Duty.—It shall make at least a biennial inspection of all accredited veterinary colleges to investigate veterinary education, including preveterinary, undergraduate and graduate study, enrollment, clinics, physical plant, equipment and faculty; suggest means and methods for improvement of the same and cooperate with the college officials in realization of these objectives in progressive, higher educational standards; and upon request, examine veterinary colleges seeking accreditation by the Association. A copy of such inspection, report, and suggestions shall be sent to the dean of the veterinary

school and to the president of the college or university.

c) It shall submit annually a list of such colleges as are recommended for accreditation by the Association and make a report on the status and needs of veterinary education as conducted in the existing veterinary colleges; on the relation of veterinary education to animal production; and on the number of qualified veterinarians required to maintain a competent veterinary service.

PROPOSED REWORDING OF FOREGOING AMENDMENT

Following publication of the foregoing proposed amendment in the May, 1944, JOURNAL, the following rewording has been proposed in subparagraph (a):

Second sentence: “One member of the committee shall be appointed to *represent* each of the following branches of veterinary science” instead of “*from each of the following branches,*” etc.

(1) “the basic sciences in the veterinary curriculum” instead of “teaching staff of a veterinary college accredited by the Association.”

(4) “large animal clinical medicine and surgery” instead of “large animal practice.”

(5) “small animal clinical medicine and surgery” instead of “small animal practice.”

(6) “animal disease research” instead of “fulltime research in an educational institution of higher learning.”

At present, this part of the administrative By-Laws reads as follows:

a) Personnel.—This committee shall consist of five members appointed by the president at the rate of one member per year, each to serve for a term of five years. Not less than three members of this committee shall be members of the teaching staffs of veterinary colleges accredited by the Association but no two members shall be of the same faculty or graduates of the same veterinary college.

b) Duty.—It shall make an annual report on the status and needs of veterinary education as conducted in the existing veterinary colleges; on the relation of veterinary education to animal production; and on the number of qualified veterinarians required to maintain a competent veterinary service for the American people. When deemed necessary, the committee is authorized to inspect veterinary colleges and submit annually a list of such colleges as should be accredited by the Association.

AMENDMENTS PROPOSED LAST YEAR FOR ACTION THIS YEAR

Two proposals were submitted at the annual meeting in 1943, which will come before the House of Representatives for action this year. One is to amend the Constitution, the other to amend the Administrative By-Laws.

Proposal No. 1: Amend article II of the Constitution to read as follows:

"The objectives of the Association shall be to advance the science and art of veterinary medicine, including their relationship to the public health."

Proposal No. 2: Amend article IX, section 3, subparagraph (b), section 4, subparagraph (d) and section 5 so as to change the words:

"National Association of Bureau of Animal Industry Veterinarians" to "National Association of Federal Veterinarians" wherever the former designation, or abbreviations thereof, occur.

Additional Proposed Amendment

Amend Article XII, "Committees—Standing and Special" by adding the following:

11. COMMITTEE ON REGISTRY OF VETERINARY PATHOLOGY

a) Personnel.—This committee shall consist of three members, one of whom shall be appointed annually by the president for a term of three years. The first membership shall be appointed for one, two and three years, respectively, for terms expiring in the same order. The president shall appoint the chairman.

b) Duties.—It shall be the duty of this committee to collaborate with the proper officials in the establishment and maintenance of a registry of veterinary pathology in the Army Medical Museum. The committee shall, from time to time, make recommendations for the conduct of this work, on the part of the Association, for the purpose of developing the scope and usefulness of the registry.

(Note: This amendment is submitted to implement an arrangement with the Army Medical Museum, already approved by the Surgeon General of the Army and the AVMA Board of Governors. A special committee has been appointed by President Bower to carry on the development of the registry pending the approval for a standing committee as proposed in the amendment.)

Can You Help Locate These Members?

The aid of JOURNAL readers is solicited in locating the following members, mail to whom has been returned to the Association's central office. The last known address of each is given.

Should you be able to provide information as to present residence, your advice *via* postcard or letter will be greatly appreciated.

Aasen, Stephen W., Marshfield, Ore.

Bird, A. G., Vet. Insp., Dept. of Health, San-turce, P. R.

Booth, Thomas E., 5 Charles St., White Plains, N. Y.

Bowie, B. S., Nimmons, S. Car.

Gleiser, Chester A., Office of Veterinary Surgeon, Sheppard Field, Wichita Falls, Texas.

Isaacson, Lloyd L., Stanchfield, Minn.

Kinne, Harry W., Cando, N. Dak.

Koll, Harry, 4116 Pershing, El Paso, Texas.

McKercher, Arthur, 517 Washington Ave., S., Lansing 15, Mich.

Moughon, William C., Box 609, El Campo, Texas.

Robertson, D. S. Station Hosp., Ft. Sam Houston, Texas.

Rodgers, Robert J., Gen. Del., Smithville, Texas.

Siver, Dougal, 429 Wrightwood Ave., Apt. 1-N, Chicago, Ill.

Stein, A. J., 321 S. Adams, Monte Vista, Colo.

Thornton, Grover C. Jr., Mira Mar Hotel, 6220 Woodlawn Ave., Chicago, Ill.

Traskus, Anthony D., 240 N. Main St., Pittston, Pa.

Tyler, Lindy, 805 Burlingame Ave., Burlingame, Calif.

Wiseman, E. S., Camp Veterinarian, Camp Edwards, Mass.

Executive Board Elections in Districts IV and X

Nominating polls for members of the Executive Board of District IV (Alabama, Cuba, Florida, Georgia, Kentucky, Mississippi, North Carolina, Puerto Rico, South Carolina, South America, Tennessee, Virginia, West Indies and West Virginia) and District X (Michigan and Ohio) closed on May 15, 1944. Drs. W. A. Young and L. R. Maschgan of Chicago served as a board of tellers to count the ballots and certified the following candidates:

DISTRICT IV

B. E. Carlisle, Camilla, Ga.

W. E. Cotton, Auburn, Ala.

John H. Gillmann, Memphis, Tenn.

I. S. McAdory, Auburn, Ala.

Wm. Moore, Raleigh, N. Car.

DISTRICT X

O. V. Brumley, Columbus, Ohio

F. D. Egan, Detroit, Mich.

Ward Giltner, East Lansing, Mich.

B. J. Killham, East Lansing, Mich.

W. R. Krill, Columbus, Ohio

Ballots were mailed to all members in the districts on May 19; the polls will close on July 19, 1944. The elections are for full terms of five years beginning at the conclusion of the annual meeting in 1944 and terminating in 1949.

The present incumbents are Dr. W. E. Cotton, District IV, and Dr. O. V. Brumley, District X.

APPLICATIONS

The listing of applicants conforms to the requirements of the administrative by-laws—Article X, Section 2.

First Listing

- BATEMAN, ROBERT A.**
P. O. Box 3071, Saratoga, Wyo.
D.V.Sc., Kansas City Veterinary College, 1910.
Vouchers: A. M. Lee and R. F. Bourne.
- FILSON, JIM G.**
P. O. Box 311, Jamestown, Pa.
B.V.Sc., Ontario Veterinary College, 1938.
Vouchers: P. L. Rouse and D. LaGrange.
- GAETZ, RICHARD H.**
783 Ellicott St., Buffalo, N. Y.
V.M.D., University of Pennsylvania, 1935.
Vouchers: H. T. Gaetz and F. E. McClelland.
- GAUNTT, PHILIP L. JR.**
1472 W. State St., Trenton, N. J.
V.M.D., University of Pennsylvania, 1938.
Vouchers: F. E. Lentz and J. R. Porteus.
- JOHNSON, LEO R.**
134 N. Magnolia Ave., El Cajon, Calif.
D.V.M., McKillip Veterinary College, 1918.
Vouchers: A. R. Zumwalt and R. R. Younce.
- KRENTZ, F. J.**
Mendota, Ill.
M.D.C., Chicago Veterinary College, 1909.
Vouchers: F. Breed and A. E. Bott.
- LANG, GEORGE K.**
A.P.O. 677, c/o P.M., Presque Isle, Maine.
D.V.M., Kansas State College, 1937.
Vouchers: F. W. Jordan and W. O. Brinker.
- MURPHY, AUSTIN J.**
4743 Cape Way, San Diego 7, Calif.
D.V.M., Chicago Veterinary College, 1915.
Vouchers: A. R. Zumwalt and R. E. Lovell.
- PLAMONDON, RALPH J.**
168 N. 3rd, Hillsboro, Ore.
D.V.M., Washington State College, 1943.
Vouchers: E. E. Wegner and E. W. Almquist.
- READY, WILLIAM C.**
12 Berkley St., Washington 16, D. C.
B.V.Sc., Ontario Veterinary College, 1936.
Vouchers: J. R. Currey and R. E. Nichols.
- SCHWARZ, ALFRED**
3414 Elaine Pl., Chicago, Ill.
D.V.M., Tierärztliche Hochschule, Hanover, 1898.
Vouchers: C. K. Kahn and J. G. Hardenbergh.
- STEWART, GEORGE M.**
2800 Crest Ave., Cheverly, Md.
B.V.Sc., Ontario Veterinary College, 1936.
Vouchers: J. R. Currey and R. E. Nichols.
- SWALBERT, RALPH C.**
255 S. Main St., Spanish Fork, Utah.
D.V.M., Kansas City Veterinary College, 1915.
Vouchers: F. H. Melvin and J. E. Dwyer.

WADE, GEORGE N. JR.

110 W. Main St., Mechanicsburg, Pa.
V.M.D., University of Pennsylvania, 1943.
Vouchers: E. T. Booth and D. G. Lee.

WERRIN, NATHANIEL

524 Claiborne St., Jackson, Miss.
V.M.D., University of Pennsylvania, 1934.
Vouchers: T. Zimmerman and A. Kissileff.

Second Listing

- Babson, Osman**, 339 Washington St., Gloucester, Mass.
- Fisk, Loyal H.**, Lockwood, Mo.
- George, John H.**, P. O. Box 57, Mt. Blanchard, Ohio.
- Griffin, D. W.**, P. O. Box 184, Chipley, Fla.
- Hinckley, D. F.**, 811 N. Noble, Watonga, Okla.
- Hoyt, Kenneth R.**, 303 S. 8th, Klamath Falls, Ore.
- Kress, Joseph D.**, Suffolk, Va.
- Moss, Lyle A.**, Rt. 2 Box 1034, Renton, Wash.
- Nothomb, H. V.**, 6919 Dodge St., Omaha, Neb.
- Preusser, Karl R.**, Veterinary Hosp., Ft. Sill, Okla.
- Snelling, Albert M.**, 521 Henley St., Knoxville, Tenn.
- Tovell, Leonard H.**, 10416 S. Vincennes Ave., Chicago 43, Ill.
- Treman, J. W.**, 2285 E. 4910 S., Murray, Utah.

1943 Graduate Applicants

First Listing

The following are graduates who have recently received their veterinary degrees and who have applied for AVMA membership under the provision granted in the Administrative By-Laws to members in good standing of junior chapters. Applications from this year's senior classes not received in time for listing this month will appear in later issues. An asterisk (*) after the name of a school indicates that all of this year's graduates have made application for membership.

Colorado State College

- ALLRED, J. NEWEL**, D.V.M.
120 W. Lake St., Ft. Collins, Colo.
Vouchers: R. Jensen and V. D. Stauffer.
- ANDERSON, ROBERT K.**, D.V.M.
P. O. Box 473, Ft. Collins, Colo.
Vouchers: K. W. Smith and J. Farquharson.
- BRANDT, VINCENT J.**, D.V.M.
1005 Mathews, Ft. Collins, Colo.
Vouchers: J. Farquharson and K. W. Smith.
- CANDLIN, FRANCIS T.**, D.V.M.
667 Grant St., Denver 3, Colo.
Vouchers: K. W. Smith and J. Farquharson.
- CARROLL, WALTER D.**, D.V.M.
1921 West St., Pueblo, Colo.
Vouchers: J. Farquharson and K. W. Smith.

COLLINS, G. BEN, D.V.M.
Bishop, Calif.
Vouchers: K. W. Smith and R. F. Bourne.

CONKLIN, M. H., D.V.M.
211 W. Olive St., Ft. Collins, Colo.
Vouchers: K. W. Smith and J. Farquharson.

CRUMP, JOHN A., D.V.M.
Box 521, Flagstaff, Ariz.
Vouchers: J. Farquharson and M. K. Jarvis.

DAVID, LYMAN D., D.V.M.
Monte Vista, Colo.
Vouchers: K. W. Smith and J. Farquharson.

DOVE, R. A., D.V.M.
LaVerne, Calif.
Vouchers: J. Farquharson and K. W. Smith.

ELDEED, LAWRENCE L., D.V.M.
1524 Thirteenth Ave., Greeley, Colo.
Vouchers: J. Farquharson and K. W. Smith.

FAUKS, W. K., D.V.M.
3421 N. W. 20th, Oklahoma City, Okla.
Vouchers: I. E. Newsom and J. Farquharson.

GREEN, JOSEPH D., D.V.M.
Rush, Colo.
Vouchers: J. Farquharson and I. E. Newsom.

HANKS, SIDNEY F., D.V.M.
Deer Trail, Colo.
Vouchers: J. Farquharson and R. F. Bourne.

HUDSPETH, PHIL K. III, D.V.M.
2307 Elizabeth St., Pueblo, Colo.
Vouchers: J. Farquharson and M. K. Jarvis.

JENSEN, DONALD W., D.V.M.
P. O. Box 326, Manassa, Colo.
Vouchers: K. W. Smith and J. Farquharson.

JOHNSON, CALVIN E., D.V.M.
Sanford, Colo.
Vouchers: F. Cross and J. Farquharson.

JONES, DOUGLAS D., D.V.M.
712 Woodlawn, Canon City, Colo.
Vouchers: J. Farquharson and M. K. Jarvis.

MCCORD, ROBERT C., D.V.M.
146 First Ave., Yuma, Ariz.
Vouchers: K. W. Smith and J. Farquharson.

MCGRATH, HAROLD B., D.V.M.
Rt. 1, Lamar, Colo.
Vouchers: J. Farquharson and I. E. Newsom.

POTTER, CHESTER J., D.V.M.
2482 Dorland Dr., Whittier, Calif.
Vouchers: J. Farquharson and K. W. Smith.

RIEKE, LLOYD L., D.V.M.
Sterling, Colo.
Vouchers: J. Farquharson and K. W. Smith.

RIPPLE, WILLIAM E., D.V.M.
807 Fourth St., Dodge City, Kansas.
Vouchers: J. Farquharson and K. W. Smith.

SCHOENFELD, F. JAMES, D.V.M.
Box 351, Magna, Utah.
Vouchers: J. Farquharson and M. K. Jarvis.

SHEPPARD, A. N., D.V.M.
118 S. Washington St., Casper, Wyo.
Vouchers: J. Farquharson and M. K. Jarvis.

SILVERMAN, CHARLES A., D.V.M.
2343 E. B. St., Torrington, Wyo.
Vouchers: J. Farquharson and A. W. Deem.

SMITH, EARL D., D.V.M.
Blanca, Colo.
Vouchers: J. Farquharson and K. W. Smith.

SMITH, LUTHER C., D.V.M.
2575 Clermont St., Denver, Colo.
Vouchers: L. S. Smith and J. Farquharson.

THACKERAY, CHESTER N., D.V.M.
200 E. Laurel St., Ft. Collins, Colo.
Vouchers: I. E. Newsom and J. Farquharson.

WARNOCK, RUSSELL B., D.V.M.
722 Whedbee St., Ft. Collins, Colo.
Vouchers: J. Farquharson and M. K. Jarvis.

WEINMEISTER, PAUL, D.V.M.
c/o Mrs. R. J. Blehm, Rt. 2, Box 223, Greeley, Colo.
Vouchers: J. Farquharson and K. W. Smith.

WOLFE, FRED T., D.V.M.
North Star Rt., c/o J. Eisenach, Jr., Ft. Morgan, Colo.
Vouchers: R. F. Bourne and J. Farquharson.

Kansas State College*

BARDSHAR, EDWARD, D.V.M.
Mt. Hope, Kansas.
Vouchers: E. J. Frick and R. R. Dykstra.

BROCK, W. E., D.V.M.
1446 Laramie St., Manhattan, Kansas.
Vouchers: E. J. Frick and R. R. Dykstra.

CAMPBELL, ROBERT D., D.V.M.
901 W. 11th St., Junction City, Kansas.
Vouchers: E. J. Frick and R. R. Dykstra.

CAZIER, PHILIP D., D.V.M.
1036 Cleveland, Kansas City, Kansas.
Vouchers: E. J. Frick and R. R. Dykstra.

COMBS, ORAL V., D.V.M.
Almena, Kansas.
Vouchers: E. J. Frick and R. R. Dykstra.

CURRY, CHARLES C., D.V.M.
1528 N. 4th, Arkansas City, Kansas.
Vouchers: E. J. Frick and R. R. Dykstra.

GARVEET, LEO J., D.V.M.
Rooks County, Plainville, Kansas.
Vouchers: R. E. Witter and E. J. Frick.

GRANDFIELD, R. M., D.V.M.
1806 Laramie St., Manhattan, Kansas.
Vouchers: E. J. Frick and R. R. Dykstra.

HANEY, D. ROSS, D.V.M.
1317 Anderson, Manhattan, Kansas.
Vouchers: E. J. Frick and R. R. Dykstra.

MICHAEL, ROBERT B., D.V.M.
220 Houston, Manhattan, Kansas.
Vouchers: E. J. Frick and R. R. Dykstra.

MORRIS, MARCUS D., D.V.M.
1614 Fairchild St., Manhattan, Kansas.
Vouchers: E. J. Frick and R. R. Dykstra.

PORTER, JAMES A. JR., D.V.M.
123 N. 12th St., Fredonia, Kansas.
Vouchers: A. Porter and E. J. Frick.

REED, ROBERT C., D.V.M.
Stockton, Kansas.
Vouchers: E. J. Frick and R. R. Dykstra.

RILEY, CHARLES W., D.V.M.
509 5th Ave., Moultrie, Ga.
Vouchers: E. J. Frick and R. R. Dykstra.

RILING, JOHN L., D.V.M.

906 Mass. St., Lawrence, Kansas.

Vouchers: E. J. Frick and R. R. Dykstra.

SCHOEN, EDWIN A., D.V.M.

Lenora, Kansas.

Vouchers: E. J. Frick and R. R. Dykstra.

SCHWAB, CHARLES B., D.V.M.

Morrowville, Kansas.

Vouchers: E. J. Frick and R. R. Dykstra.

SCOBY, MELVIN F., D.V.M.

Fairview, Kansas.

Vouchers: E. J. Frick and R. R. Dykstra.

SHOPMAKER, ALLEN B., D.V.M.

1010 E. 27th St., Kansas City, Mo.

Vouchers: E. J. Frick and R. R. Dykstra.

STONEBRAKER, ERNEST K., D.V.M.

Shawnee Apts., Leavenworth, Kansas.

Vouchers: E. J. Frick and R. R. Dykstra.

STUMPF, CHARLES D., D.V.M.

R.R. 6, Kansas City, Kansas.

Vouchers: E. J. Frick and R. R. Dykstra.

WEMPE, LEO R., D.V.M.

Frankfort, Kansas.

Vouchers: E. J. Frick and R. R. Dykstra.

Michigan State College**GRAY, CLINTON W., D.V.M.**

124 S. Vine St., Fergus Falls, Minn.

Vouchers: C. F. Clark and L. B. Sholl.

KONDE, W. N., D.V.M.

7555 Kentucky, Dearborn, Mich.

Vouchers: C. F. Clark and L. B. Sholl.

WESTCOTT, ROY, D.V.M.

1327 Hickory St., Box 75, Haslett, Mich.

Vouchers: C. F. Clark and B. J. Killham.

Ontario Veterinary College**CARNEY, J. J., B.V.Sc.**

Ontario Veterinary College, Guelph, Ont., Can.

Vouchers: R. A. McIntosh and C. D. McGilvray.

CRAWLEY, JOHN F., B.V.Sc.

R.R. 6, Guelph, Ont., Can.

Vouchers: F. W. Schofield and R. A. McIntosh.

DALTON, J. C., B.V.Sc.

112 Ardagh St., Toronto, Ont., Can.

Vouchers: F. W. Schofield and R. A. McIntosh.

FITTS, ROBERT H. 3rd., B.V.Sc.

Hemlock Point Rd., Chagrin Falls, Ohio.

Vouchers: C. D. McGilvray and H. T. Batt.

NEWLON, ROBERT D., B.V.Sc.

1515 Fifth St., New Brighton, Pa.

Vouchers: C. D. McGilvray and R. A. McIntosh.

STEADMAN, H. R. Jr., B.V.Sc.

529 E. Sixth St., Erie, Pa.

Vouchers: C. D. McGilvray and R. A. McIntosh.

Washington State College**CAMPBELL, LEWIS J., D.V.M.**

624 M. St., Grants Pass, Ore.

Vouchers: E. E. Wegner and G. F. Reid.

Second Listing**Michigan State College**

Bigelow, Myron C., D.V.M., Flushing Rd., Flushing, Mich.

COMMENCEMENTS**Colorado State College**

The commencement exercises of Colorado State College were held on April 21, 1944. The following men were graduated with the degree of Doctor of Veterinary Medicine:

Allred, J. N.	Jones, D. D.
Anderson, R. K.	Keller, R. J.
Brandt, V. J.	McCord, R. C.
Candlin, F. T.	McGrath, H. B.
Carroll, W. D.	McNamara, J. H.
Collins, G. B.	Potter, C. J.
Conklin, M. H.	Reike, L.
Crump, J. A.	Ripple, W. E.
David, L. D.	Schoenfeld, F. J.
Dove, R. A.	Sheppard, A. N.
Eldred, L. L.	Silverman, C. A.
Fauks, W. K.	Smith, E. D.
Green, J. D.	Smith, L. C.
Hanks, S. F.	Thackeray, C. N.
Hudspeth, P. K., III	Warnock, R. B.
Jensen, D. W.	Weinmeister, P.
Johnson, C.	Wolfe, F. T.

The man with the highest scholarship standing in the class was J. Newell Allred.

The following were commissioned as first lieutenants in the veterinary corps of the United States Army:

Brandt, V. Joe	McGrath, Harold B.
Carroll, Walter D.	Ripple, Wm. Earl
Crump, John A.	Sheppard, A. Niel
Hanks, Sidney F.	Smith, Earl Dean
Keller, Robert J.	Smith, Luther Conrad

The Ontario Veterinary College

The following candidates received the degree of Bachelor of Veterinary Science at the convocation of the University of Toronto, May 12, 1944:

Campbell, G. A.	Goossen, I. G.
Crawley, J. F.	Moynihan, W.
Dalton, J. C.	Newlon, R. D.
Fitts, R. H.	Peterson, G. A.
Fleming, L. H.	Poland, M. E.
Fritz, L. C.	Reuber, H. W.
Gilbertson, G. E.	Steadman, H. R.

Honour standing: Gold medal awarded by the College for highest aggregate standing to J. F. Crawley; second prize to G. A. Peterson; third prize to H. W. Reuber.

This country does not belong to the industries, nor to the farmers, nor to labor, nor to the government. It belongs to the people. So, buy War Bonds and preserve what is yours.

U. S. GOVERNMENT

Major Frank A. Todd (I.S.C., '33) was awarded the Legion of Merit Feb. 12, 1944, at Ft. Devens, Mass. The citation which accompanied the award is given below:

Major Frank A. Todd, Veterinary Corps, United States Army, for exceptional, meritorious conduct in the performance of outstanding services as Veterinary Officer, Iceland Base Command, from 16 September 1941 to 1 June 1943. Major Todd was responsible for the establishment and maintenance of proper sanitary standards for the American military personnel in Iceland Base Command. In addition to his assigned duties, Major Todd rendered great assistance to the government and people of Iceland in the fields of animal husbandry, farm conservation, and research in connection with the diseases of Icelandic domestic animals. Through Major Todd's intelligent and enthusiastic efforts, relations between the Icelandic Government and the people of the United States have been greatly enhanced. Entered military service from Iowa.

Army

Mobile Food-Testing Laboratory.—The Quartermaster Corps Subsistence Research and Development Laboratory operates a mobile food-testing laboratory of the truck-trailer type among plants which produce canned and dehydrated food for the Army. The laboratory is manned by food technicians of the Corps who are charged, particularly, with the testing of foods as to their keeping properties in different climates and under various conditions of storage.

War-Dog Training.—Battle conditioning is a necessary part of the war-dog training program, whether the dogs are for patrol, messenger, casualty, attack, or other activity. The training must be highly specialized. The dogs must be inured to noises and distractions not related to their work, particularly gunfire. Before being assigned to front line duty, they receive an orientation course, like all soldiers receive. Five reception and training centers are provided by the Quartermaster Corps.—*Bureau of Public Relations, War Department.*

Hospitalization of the Wounded.—The Book and Magazine Bureau, Office of War Information, Social Security Building, Washington 25, D.C., is the place to inquire about wounded

soldiers who have been returned from foreign service for treatment in Army General Hospitals. The number is large and inquiries numerous. Request is made that inquiries be sent to the foregoing address. No discharge of service men is permitted without all needed medical appliances; therefore, money collections to supply such appliances are not necessary, the announcement emphasized.

No More Stale Canned Goods.—The quartermaster Corps has issued an order requiring that manufacturers of canned goods for the army mark their cases with the year of production—"44" for this year—in order that a given year's pack be used before new stock is issued for use by the troops. Under the former markings, the time of production could not be that easily determined.

Gas Gangrene Antitoxin.—The need of preventing gas gangrene is shown by an order of the War Production Board for 1,350,000 doses of gas gangrene antitoxin for lend-lease. The removal of as few as 100 to 200 men from the chemicals industry is pointed out as an example of releasing important technicians to the armed forces.—*From a Release of the OWI.*

Brucellosis-Free Areas.—Chief A. W. Miller announced that there are now 591 counties in 22 states declared as modified accredited brucellosis-free areas, including 11 counties recently added to the list. In the 11 counties just so designated approximately 115,700 dairy and breeding cattle over 6 months old have been tested one or more times for brucellosis. In sections where the incidence of the infection is high, vaccination with strain 19 has proved helpful in controlling brucellosis, Chief Miller adds.—*From USDA Release Apr. 8, 1944.*

AMONG THE STATES

Illinois

Attention to Licensed, Approved, and Accredited Veterinarians.—The Department of Agriculture is charged by the statutes with the duty of enforcing the laws and regulations pertaining to animals affected with, suspected of being affected with, or exposed to contagious and infectious diseases; the Department of Registration and Education with certifying to the qualification and the professional conduct of veterinarians practicing within the state, particularly in connection with obedience to the laws under which they function.

In view of new personnel entering the state to practice veterinary medicine and personnel

who may not be familiar with the state laws governing their work, the following paragraph of the statutes is quoted for their future guidance and action. Paragraph 189, chapter 8, section 22, page 146, reads as follows:

Reports of Veterinarians—Penalty for Neglect.—

"Any veterinarian having information of the existence of any contagious or infectious disease among domestic animals in this state, who fails to promptly report such knowledge to the Department [of Agriculture], shall, upon conviction, be fined not exceeding five hundred dollars (\$500), or be imprisoned in the county jail not more than one year for each offense."

Under the Civil Code pertaining to licensure and the provisions of the Veterinary Practice Act relating to misbehavior and malpractice, veterinarians violating the statutes compel state officials in the line of duty to take action against them. There is no alternative on the part of those appointed to enforce law and order, in their respective departments. For example, the Veterinary Examining Committee is compelled to institute proceeding to show cause why the license of violators should be revoked.

Attention is also directed to the Smith-Hurd Illinois Revised Statutes of 1943 which not only strengthens the former laws but also reinforces the Bang's Disease Control Law of July 12, 1939.

In view of the wartime emergency in one of the nation's main food-producing states coupled with reports brought to the Department's attention, it has been thought expedient before taking disciplinary action to first re-inform all veterinarians that the livestock sanitary laws of Illinois are strict and will be enforced.

It should be needless to remind professional men that they cannot hope for favorable consideration from the public, if they lack the courage to discipline their profession's personnel who disobey the laws enacted to regulate their work. Veterinarians, licensed, approved, and accredited under state and federal laws, voluntarily assume responsibilities which the state and the nation expect them to fulfil.

THE VETERINARY EXAMINING COMMITTEE, DEPARTMENT OF REGISTRATION AND EDUCATION.

L. A. MERILLAT, *Chairman*.

• • •

Dr. Carpenter Appointed to New Position.—The Institute of American Poultry Industries announces the appointment of Dr. Cliff D. Carpenter as Chief Executive Officer, effective June 1, 1944.

During the past year and a half Dr. Carpenter has been heading the Poultry Conservation program of the U. S. Department of Agriculture, having been lent to this work by Allied Mills, Inc., as a "dollar a year" man. Serving

as a liaison man between the Department of Agriculture and the poultry industry, Dr. Carpenter was largely responsible for effecting a united attack by all segments of the poultry industry on the mortality of poultry, in an effort to reach the poultry production goals of 1943 and 1944. For the present, Dr. Carpenter will continue to serve this effort, in addition to taking up his new duties, until a successor has become familiar with the work.

When the poultry project was transferred from the Bureau of Animal Husbandry to the Feed Management Branch of the War Food Administration early in January 1944, he was made special assistant to the chief, Walter C. Berger, and will also continue in that capacity for the time being.

As Chief Executive Officer of the Institute of American Poultry Industries, Dr. Carpenter will extend the work of that important organization which seeks to cooperate with federal and state agencies on matters that concern the poultry industry, and to promote scientific work which has to do with the production, the preparation for market, and the marketing of eggs and poultry.

The offices of the Institute of American Poultry Industries are located in the Mercantile Exchange, 110 N. Franklin Street, Chicago 6, Illinois, where Dr. Carpenter will maintain his headquarters.

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"Needs Veterinary College" is the title of the following editorial in the *Prairie Farmer* (March 18, 1944), America's oldest farm paper:

Time was when they got to calling a man "Doc" because he knew how to put a twitch on a horse's nose and put a Spanish Fly blister on a curb. Finally he hung out his shingle, learned a few big, mysterious words, and practicing by rule of thumb, saved the lives and usefulness of many horses in his neighborhood. He was a "hoss doctor."

The old "hoss doctor" served a great place in the livestock business, especially because he knew about horses, and horses were the power plants on all farms. Then schools started, and veterinarians were graduated. Some schools were just diploma mills. Others really were based on research work, and turned out qualified veterinarians. These are the men who have placed a scientific foundation under livestock and poultry health.

The livestock, dairy and poultry industries are the basis of fine farming and great agricultural wealth. Profit depends upon health of flocks and herds. Good stockmen and poultrymen have general knowledge with which to maintain health in their flocks and herds, they understand the fundamentals of sanitation and in most cases of medication. Many are not so good on diagnosis. That

often calls for scientific appraisal and frequently research in laboratories.

Let's look for a moment at the chances of a young man in Illinois getting a veterinary education. There are seven [ten is the correct number—Ed.] qualified veterinary colleges in the United States. Of these one is located at Ohio State, and another at Ames, Iowa. Priority in enrollment is restricted to young men from those states, the Ohio boy having first choice at Ohio; Iowa, at Ames, and so on. The territory is divided, then, so that if an Illinois boy wishes to go to Ames, he must first apply at Ohio, and if admitted, then he goes to Ohio, although he prefers Ames. If Ohio is full up, then he may apply at Ames, and if there is room, he can enroll there.

Illinois offers him no opportunity for taking a college course in veterinary medicine; that is, such a course as will qualify him to practice under the laws of the state or of the United States.

The University of Illinois should establish a fine college of veterinary science, where young men of the state may be given the best possible training for practicing this art and science. It should be founded upon a research program which will put the state in the foreground in the livestock and poultry industry. It should be manned with the best the country affords in scientists of teaching and research ability.

• • •

McLean County Veterinary Medical Association.—Fifty veterinarians met on May 4, 1944 at the Illinois Hotel, with dinner at 6:30 p. m. to hear George H. Hapson, DeLaval Separator, N. Y. City, discuss "The Milking Machine—Its Proper Use and Care in Relation to Mastitis."

s/ H. T. CLARNO, *Secretary-Treasurer.*

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State Association. — The Public Relations Committee—Dykstra, McLaughlin, Smith, Rearson—has arranged a comprehensive radio program through the Dinner Bell Hour of WLS, the *Prairie Farmer* station, 12 m. to 12:30 p.m., the last Thursday of each month. The first speaker was L. M. Darst, of Princeton, who discussed plans for saving more baby pigs, Secretary Hastings announced.

s/C. C. HASTINGS, *Secretary-Treasurer.*

• • •

A Hundred Years of Horse Racing—Arlington and Washington Park will celebrate, in special ways, the centennial anniversary of horse racing in Chicago. Chicago, home of the American Derby, was but seven years old and still visited by Indians when its first racetrack opened to the public—*From Blood Horse.*

Iowa

East Central Association.—Fifty-six veterinarians from 16 counties attended the April, 1944 meeting at the Hotel Montrose, Cedar Rapids. Missouri and Illinois were also represented.

Cliff D. Carpenter, of Chicago was the guest speaker. He spoke on and made recommendation for stretching the dwindling livestock feed supply in order that the government's production goal may be met. "There is enough feed in the country if used right," the Doctor declared, and he warned, "We can't waste our current feed supply in marginal production."

P. V. Neuzil, of Blairstown, distinguished for his strategy in practice, led a discussion of poultry problems in which the conservation program mapped out by Carpenter last year was emphasized.

In attendance were C. C. Franks, chief veterinarian, Division of Animal Industry, J. A. Barger, BAI inspector-in-charge, Des Moines, and R. E. Elson, president of the Eastern Iowa Veterinary Association, Vinton.

President Waggoner announced a poultry clinic for the May meeting which will be held at the Spencer Small Animal Hospital at Cedar Rapids. L. W. Kellogg is chairman of the program committee and will be assisted by W. W. Bronson, O. E. York, and R. J. Kleinick. C. G. Spencer, J. W. Griffith, A. R. Menary, and J. W. Pirle were named to make the arrangements for the June meeting.

MAY MEETING

Forty-three veterinarians from the surrounding fifteen counties attended the Association's dinner-meeting at the Hotel Montrose, Cedar Rapids, May 11, 1944. Following the dinner, the assembly proceeded to the Spencer Animal Hospital for the poultry clinic, which included the following program:

George B. Senior, Mason City: "Control of Poultry Diseases Through Breeding, Feeding, Management, and Sanitation."

P. V. Neuzil, Blairstown: "Pioneer Hybrid Chickens, Crossbred Rhode Island Reds and Leghorns, and Leukosis Control."

James W. Pirie, Cedar Rapids: "Control of Bronchitis in Poultry."

A. R. Stephenson, Bennett: "Control of Fowl Laryngotracheitis by Vaccination."

John B. Bryant, Mount Vernon: "Feeding of Grit to Chicks and Litter for Chicks."

s/M. C. LARSON, *Secretary-Treasurer*

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Southeastern Iowa Veterinary Medical Association.—The Association held a meeting May 2, 1944, at Hotel Brazelton, Mount Pleasant, Ia. H. E. Tyner was the Quiz Master on "Diseases of Cattle."

s/TOM J. McCABE, *Secretary-Treasurer.*

Cedar Valley Veterinary Medical Association.—Forty-nine veterinarians, representing twenty-one counties were present at the meeting held Apr. 10, 1944 at Black's Tea Room, Waterloo. H. C. Smith, Sioux City, was the main speaker and his subject was, "Salmonella Infections in Swine." D. M. Campbell, Chicago Editor, Veterinary Medicine; C. C. Franks, Ia. Dept. of Agriculture, Des Moines; and J. A. Barger, inspector-in-charge, USBAI, Des Moines, also gave talks.

MAY MEETING

Forty-one veterinarians attended the Association's meeting on May 8, 1944, at Black's Tea Room. The following program was presented:

C. A. Stewart, Tripoli: "Dystocia in Mares and Cows" also a case report on a severe nervous condition in a horse.

K. W. Schalk, Iowa Falls: "Use of Sulfa Drugs in Veterinary Practice."

Much interest was shown in the informal discussion which followed the presentation of these papers.

• • •

Fayette County Veterinary Medical Association.—Tuesday evening Apr. 18, 1944 was ladies' night and 31 veterinarians and their ladies were present at the meeting held at West Union. The following program was presented:

V. C. Willis, Waucoma: "Case Reports on Cleft Palates in Pigs."

C. C. Franks, Des Moines: "Reported on an Outbreak of Anthrax in Wright County."

s/ERNEST J. DAHLQUIST, Secretary.

Kansas

Anaplasmosis Conference.—Veterinarians, parasitologists, research workers, and stockmen met at the Division of Veterinary Medicine, Kansas State College March 14, to discuss anaplasmosis and its control. H. W. Schoening, chief of the Pathological Division, and J. C. Lotze, protozoologist, Zoological Division, of the BAI, Washington, D. C., were the guest speakers. R. R. Dykstra, L. E. Call, J. E. Eckert, and L. M. Roderick, of the local staff and T. P. Crispell, P. B. Darlington, and A. H. Gish, practitioners, joined in summing up the problem. Three conclusions appear to have been reached as to the epizootiology: (1) reckless use of the hypodermic needle, (2) the infection is insect-borne, and (3) recovered animals are carriers. Recommendations were made to base prophylactic measures on these facts. The danger season is from June to October.

Kentucky

The Louisville and Jefferson County Health Department's annual report for 1943 shows that a comprehensive system of milk, dairy, and meat inspection operates under a board of 18

members directed by Hugh R. Leavell, M.D., Dr.P.H. The veterinarian on the board is F. M. Kearns, D.V.M. (C.V.C., '11) who is designated "Veterinarian and Chief Meat Inspector." The report, a pretentious, bound volume of 75 pages, describes the work carried out by each of the 18 divisions. In respect to milk hygiene, the United States Public Health Service rates Louisville 98.3, a rating slightly below that for 1942 chargeable to increased army personnel and war workers in the area. In Louisville, 100 per cent of the milk sold is pasteurized; in the county 98.6 per cent. The average milk consumption dropped from 0.8 pint to 0.7 pint per capita for 1943. The drop was due partly to increased habitation and partly to restrictions of the War Food Administration. The report is a revealing documentation of public health work in a metropolitan area.

Maine

State Association.—At the quarterly meeting of the Maine Association held at the Elmwood Hotel, Waterville, April 12, 1944, a proposal by Dr. P. R. Baird, of Waterville, that the Association share with him in the awarding of a \$50.00 war bond to the winner of an essay contest to be held for 4-H Club members in Maine, the subject to deal with the value of veterinary service to farmers, was approved by the Association. The following committee was appointed to conduct the contest: P. R. Baird, Waterville; J. F. Witter, Orno; and S. W. Stiles, Falmouth Foreside.

The evening program included:

S. W. Stiles: "X-ray in the Practice of Veterinary Medicine."

P. R. Baird: "Rickets in Calves" and "Skin Diseases in Dogs."—two motion picture films.

J. F. Witter: "Sterility in the Bovine Species".

C. M. Merrill, South Paris: "Uterine Medication in the Cow."

s/S. D. MERRILL, Secretary-Treasurer.

Maryland

Open season was declared on foxes in 11 counties as the result of an epidemic of rabies. The rabies outbreak had reached alarming proportions in certain farm districts when the action was taken by the game wardens. A farmer, a trainman, and a truckman had been bitten by supposedly rabid foxes when the open season was declared.

Massachusetts

Massachusetts Veterinary Association.—The March meeting was devoted mainly to the discussion of swine diseases. W. E. Merrill lead with a paper on "Swine Practice." An interesting letter was read from Major R. T. Gilyard, V.C., describing equine encephalomyelitis

of the Venezuelan type. It told of work being done with virus diseases in Venezuela.

On April 26, 1944, the Association met at the Hotel Vendome, Boston. A round table discussion of "The Diagnosis and Prevention of Canine Distemper" was lead by **H. W. Jakeman**. The broadcast on "Horse Health", given by **C. Thibeault**, March 6, 1944, was also presented.

s/H. W. JAKEMAN, *Secretary*.

Michigan

Dr. Bryan Appointed Head of Surgery and Medicine at Michigan State College.—On July 1, 1944, Dr. C. S. Bryan will succeed Dr. John P. Hutton as professor of surgery and medicine, and head of the department, in the Division of Veterinary Science at Michigan State



Dr. C. S. Bryan

College. Dr. Bryan is presently associate professor and research associate in bacteriology and public health.

He was born in Bucks County, Pennsylvania, in 1908. He received the degree of B.S. in dairy science and bacteriology from Pennsylvania State College in 1930, M.S. in 1932 and Ph.D. in 1937 from Michigan State College, and D.V.M. in 1942 from the same institution. Dr. Bryan is well known for his work in milk sanitation and for his illustrated lectures in that field and on mastitis control, having appeared on the programs of a number of state associations in recent months.

Dr. Hutton (OSU '11) has been on the faculty at Michigan State College for thirty-two years; after July 1, he becomes distinguished professor of surgery and medicine, a highly merited recognition of service and accomplishment.

New York

Veterinary Medical Association of New York City.—The Association met April 5, 1944, at the Hotel New Yorker. A symposium on "Urinary Tract Disturbances of the Dog and Cat." was conducted by **Samuel A. Goldberg**. The clinical aspects of the subject were presented by **C. E. DeCamp** and the laboratory procedures by **Edwin O. Gilbert**. Dr. Goldberg concluded the symposium by presenting a series of slides illustrating "Urinary Tract Pathology."

The May meeting of the Association was also held at the Hotel New Yorker. **Victor Carabba**, Bellevue Hospital, New York, was guest speaker. He told of recent advances in protein balance in surgery. A motion picture in color, "Life Cycle of the Rocky Mountain Spotted Fever Tick." was shown.

s/C. R. SCHROEDER, *Secretary*.

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Radio "Animal Gossip" Contest.—The modern Farmer Program of station WEA, New York, in cooperation with the state veterinary medical associations of New York, Connecticut, Pennsylvania and New Jersey, conducted a novel contest which started on April 1 and closed May 15, 1944. This contest was an outgrowth of the state association broadcasts inaugurated in January of this year. It was open to all people living and working on farms in the northeastern states and required that a letter of not more than 300 words be written on the subject, "How We Keep Livestock and Poultry Healthy on Our Farm."

The purpose of the contest was to measure listener response to the "Animal Gossip" series of broadcasts which were a weekly feature beginning January 24, 1944, on the "Modern Farmer" program of WEA in which the four associations, as noted before, participated. The contest was divided into junior (under 21) and senior (over 21) classes, the prizes for each division being: 1st, \$100; 2nd, \$75; 3rd, \$50; and 35 prizes of \$5 each, or a total of 76 prizes.

The judges of the contest include one representative each from the state veterinary medical associations of New York, Connecticut, Pennsylvania and New Jersey and a prominent woman 4-H Club leader in the northeastern states to represent station WEA. Presentation of prizes will be made on July 17, 1944, in a special broadcast at which the first-prize winners will read their essays.

North Carolina

Dr. Hugh Calvin Rea, of Charlotte, addressed the James H. Lane chapter of the United Daughters of the Confederacy Jan. 8, 1944, on the subject, "Lee: An Immortal Son of the South." The address was an excellent selection of historical facts in the life of Robert

E. Lee, as well as a presentation of his high ideals and his yearning for justice for all mankind.

Ohio

N. S. Craver, Youngstown, Ohio, president of the Ohio Veterinary Medical Association, was the "Keep 'em Healthy" guest on "Everybody's Farm Hour" over station WLW, Cincinnati, on Saturday, May 13, 1944, from 12 to 1 p. m. EWT. Dr. Craver discussed the topic, "Veterinary Service in War."

The "Keep 'em Healthy" series was begun more than a year ago on the WLW "Everybody's Farm Hour" as a help to the farmers in the midwest area in maintaining the health of their livestock and poultry flocks. Each program in the series presents a leading veterinarian from the area in a discussion of an important subject pertaining to livestock or poultry health. Coöperating in the series are the veterinary medical associations of Ohio, Indiana, and Kentucky.

Ontario

Veterinary School of Public Health.—The University of Toronto, School of Hygiene, announces the founding of the first veterinary school of public health in history, open to "graduates in veterinary science at this university, or other universities, or other institutions recognized by the Senate." The course will extend over an academic year of eight months plus two months of practical field work, and leads to the degree of Doctor of Veterinary Public Health (D.V.P.H.). The faculty is charged with providing the instruction through the School of Hygiene, Faculty of Medicine, Faculty of Arts, School of Social Work, and the Ontario Veterinary College. "A child of Principal McGilvray" the correspondent says. The branches of study listed in the announcement are:

Bacteriology	Immunology
Entomology	Physiological
Parasitology	Hygiene
Industrial Hygiene	Nutrition
Public Health	Public Health
Administration	Education
Food Control	Social Science

The fees are: Tuition, \$150; diploma, \$10. For details, address School of Hygiene, University of Toronto, at Toronto.

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"The Right Dog for the Right Home" is the catchy title of a new booklet by J. A. Campbell, distinguished Toronto veterinarian. It runs the whole gamut of subjects such a book should contain to serve its purpose in the different estates: home, farm, and field. The material is

well arranged, full of useful information and ideas, and no less valuable because it leads headlong into the advertisement of a ripping good dog biscuit. The JOURNAL appreciates the *de luxe* autographed copy received for the library.—L. A. M.

Pennsylvania

Ardmore Rotary Hears Ivens, Sr.—Dr. Wm. H. Ivens, Sr., spoke before his local Rotary Club on April 13, 1944, on the subject, "What the Veterinary Profession Means to Mankind." *The Riard*, weekly newsheet of the club, had the following to say about it: "Last week we mined our own 'acre of diamonds' and learned a lot about veterinarians' usefulness to mankind from our own Bill Ivens. It's peculiar how we always think only of animals when we speak of veterinary medicine but, after hearing Bill tell us of the many cures for the ills of mankind brought about by the studies of veterinarians, we realize how much we are indebted to the best friend of man's best friend."

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Killed by a Bull.—Samuel R. McClurg, 54, Espyville farmer, was killed by his 4-year-old, erstwhile perfectly harmless bull, according to an editorial in *Pennsylvania Farmer* (Feb. 26, 1944). This was the 224th fatal encounter with bulls that has come to its attention and the 600th such accident including serious but nonfatal attacks. "The domestic bull—the most dangerous animal on earth," the editor adds. [Cause: the bull ring.—Ed.]

Texas

Rabies.—"Texas Rabies Percentage One of the Highest in the United States" is a headline in the *Texas Veterinary Bulletin*, official publication of the state association. According to the late L. T. Webster, of the Rockefeller Institute of Medical Research, the incidence of canine rabies is reported to be high in Texas and California, 1,000 cases annually during the last five years, compared with 400 to 800 cases each in Alabama, Georgia, Tennessee, Ohio, Illinois, Michigan, and Indiana. Strangely, there are states reporting one case or less annually. Perhaps, the discrepancy is due to less vigilance than in Texas in collecting facts. [Dr. Webster pointed out that the number of cases of rabies in animals has not been determined.—Ed.]

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Logical Preventive Measure.—A legislative committee has the approval of the attorney general to take steps to obtain an injunction to stop diseased cattle sales on the ground that it is more logical to stop a menace to

public health than to wait until public health has been actually damaged before bringing the case into court.

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Phosphorous deficiency among livestock of the Southwest is prevented by adding phosphates to the drinking water. The benefit to health and growth is apparent according to a report of the USDA and local scientists. The method is more convenient than supplementing feed with bonemeal and other sources of phosphorous. Disodium phosphate and defluorinated triple superphosphate are given at the rate of 6.5 Gm. per 6 gallons of water.

West Virginia

An Interesting Letter.—Mrs. Carl W. Groppe, National Road, Elm Grove, wife of Capt. Groppe, of the Veterinary Corps, somewhere overseas, quotes as follows from a letter received from the Captain: "School continues to be more interesting each day. They have an ambitious program which includes some field trips so that we can observe how agriculture and veterinary medicine work in Our agricultural group represents the best men in their fields from all over the country and I appreciate being associated with them." Summed up, the veterinary officers overseas are making a place for themselves in the big picture.

Wisconsin

Sleeping Sickness.—Says V. S. Larson, chief veterinarian in *Hoard's Dairyman*, "The time to close the door against equine encephalomyelitis is before it makes away with the horse. It would be desirable to start vaccinating very soon." The date was April 10, 1944.

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Of the 1,000,000,000 pounds of cheese produced in the United States, about one half is made in Wisconsin.

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Northeastern Veterinary Medical Association.—The Association met at the Northland Hotel, Green Bay, April 26, 1944. About fifty veterinarians heard the following program:

W. R. Trombley, Appleton: "Artificial Insemination."

B. A. Beach, University of Wisconsin: "State Regulations for the control of Brucellosis." A lively discussion followed.

S/JAMES HEALY, *Resident Secretary.*

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Southeastern Veterinary Medical Association.—Fifty-three members met at Beaver Dam, April 20, 1944, to hear an address by Mr. Wilson, CIBA Company, on the subject, "Endocrinology—Internal Secretions."

S/JAMES HEALY, *Resident Secretary.*

Northwestern Veterinary Medical Association.—The Association held a meeting March 15, 1944, at the Northern Hotel, Chippewa Falls. B. A. Beach was guest speaker and talked on "Proposed Legislation."

S/JAMES HEALY, *Resident Secretary.*

South America

Peruvian Veterinary School Officially Recognized.—By decree signed by the President of Peru, the recently formed veterinary school in Lima, Peru, has been officially recognized. The first class of ten students was graduated in January, 1944, and all commissioned as 2nd lieutenants in the veterinary corps of the Peruvian army. Of the ten graduates, four are studying in the United States (1 at Cornell; 1 at Texas; 1 at Ohio; and 1 at Colorado), and they will also receive their degrees from these schools in the States. Lt. Colonel Russell McNellis (Iowa '28), Veterinary Corps, U. S. Army, and member of the U. S. Military Mission in Peru, has been working to organize the school in Lima for the past two years.

The course consists of four years of professional studies with a prerequisite of two years of preveterinary training or its equivalent.

STATE BOARD EXAMINATIONS

Arizona—The Arizona State Board of Veterinary Medical Examiners will hold its next examination at the Capitol Bldg., Phoenix, Ariz., June 7-8, 1944. Address inquiries to J. C. Fletcher, Secretary of the Board, Iron Springs Road, Prescott, Ariz.

Illinois—The Illinois Department of Registration and Education will hold its main examination on July 31 and Aug. 1, 1944, at the Department's headquarters, 600 S. Michigan Ave., Chicago. Applications should be filed with the superintendent, Department of Registration and Education, Springfield, twenty days prior to these dates. The application fee is \$20.00. Address inquiries to L. A. Merillat, chairman, 600 S. Michigan Ave., Chicago 5, Ill.

COMING MEETINGS

Sociedad Insular de Medicos Veterinarios. School of Tropical Medicine, San Juan, Puerto Rico, June 3-4, 1944. O. A. Lopez-Pacheco, Hato Rey, Puerto Rico, secretary-treasurer.

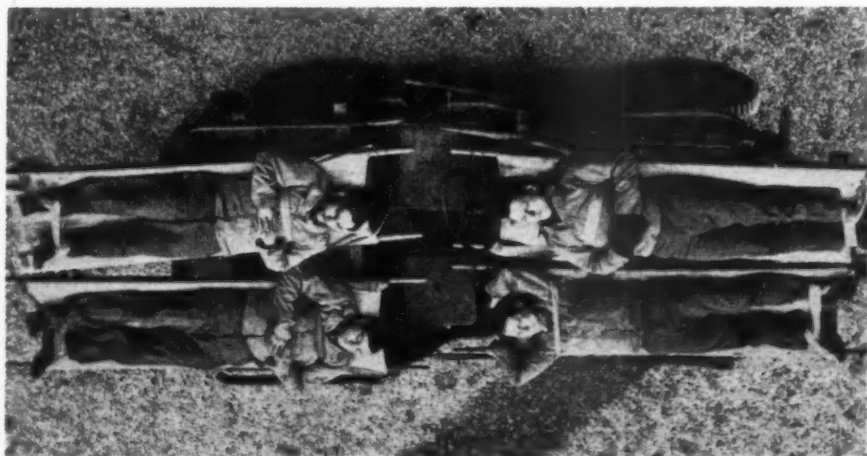
American College of Allergists. Palmer House, Chicago, June 10-11, 1944. (Joint conference on allergies in animals will be held on afternoon of June 9. All veterinarians interested in allergy are invited.) Fred W. Wittich, M.D., 401 LaSalle Medical Bldg., Minneapolis 2, Minn., secretary-treasurer.

Oklahoma Veterinary Medical Association.

- Enid, Okla., June 19, 1944. F. Y. S. Moore, Box 485, McAlester, Okla., President.
- Idaho Veterinary Medical Association. Twin Falls, Idaho, June 22-23, 1944. P. H. Graves, Box 196, Idaho Falls, Idaho, acting secretary.
- Wisconsin Veterinary Medical Association. Hotel Witter, Wisconsin Rapids, Wis., June 22-23, 1944. B. A. Beach, Genetics Bldg., Madison 6, Wis., secretary.
- South Carolina State Veterinary Medical Association. Wade Hampton Hotel, Columbia, S. Car., June 26-27, 1944. R. A. Mays, 415 Calhoun State Office Bldg., Columbia, S. Car., secretary-treasurer.
- Missouri Veterinary Medical Association. Jefferson City, Mo., June 26-27, 1944. J. L. Wells, Box 676, Kansas City, Mo., secretary-treasurer.
- Michigan State Veterinary Medical Association. East Lansing, Mich., June 27-28. B. J. Killham, Michigan State College, East Lansing, Mich., secretary.
- North Carolina State Veterinary Medical Association. Carolina Hotel, Raleigh, N. C., June 28-29, 1944. J. H. Brown, Tarboro, N. C., secretary.
- Pacific Northwest Veterinary Medical Association. Vancouver, British Columbia, July 10-11.
- Maine Veterinary Medical Association. Belfast, Maine, July 12, 1944. S. D. Merrill, South Paris, Maine, secretary-treasurer.
- Virginia State Veterinary Medical Association. Hotel Roanoke, Roanoke, Va., July 12-13-14, 1944. E. P. Johnson, Box 593, Blacksburg, Va., secretary.
- American Veterinary Medical Association, eighty-first annual meeting. Palmer House, Chicago, Ill., Aug. 22-24, 1944. J. G. Hardenbergh, 600 S. Michigan Ave., Chicago 5, Ill., executive secretary.
- American Animal Hospital Association. Palmer House, Chicago, Ill., Aug. 25, 1944. R. E. Ruggles, P. O. Box 303, Moline, Ill., secretary.
- American Association for the Advancement of Science. Cleveland, Ohio, Sept. 11-16, 1944. Sam Woodley, Smithsonian Institution Bldg., Washington 25, D. C., assistant secretary.
- American Public Health Association. Hotel Pennsylvania, New York, N. Y., Oct. 3-5, 1944. Reginald M. Atwater, 1790 Broadway, New York, N. Y., chairman, program committee.
- Short Course for Veterinarians. Purdue University, Lafayette, Ind., Oct. 5-6, 1944. C. R.

Rommel drove Montgomery across North Africa with superior equipment and turned right-about-face when the reverse came to pass. War Bonds are potential equipment.

The Versatile Jeep



—U.S. Signal Corps

The popular army vehicle, commonly known as the jeep, has many uses one of which is the easy conversion into a four-litter ambulance. The photograph was taken in England where a large number of American troops are training for duty on the battle fronts.

Donham, Dept. of Veterinary Science, Purdue University, head.

Eastern Iowa Veterinary Medical Association. Hotel Montrose, Cedar Rapids, Iowa, Oct. 10-11, 1944. C. C. Graham, Wellsburg, Iowa, secretary.

United States Live Stock Sanitary Association. LaSalle Hotel, Chicago, Ill., Dec. 6-7-8, 1944. R. A. Hendershott, Trenton, N. J., secretary-treasurer.

ENGAGEMENT

Mr. and Mrs. R. S. Tuck, Sr., Matamoras, New Zealand, announced the engagement of their youngest daughter, Iris, to Dr. William T. Cawker (Ont., '42) second son of Mr. and Mrs. A. B. Cawker, of Port Perry, Ont.—*Aukland (N. Z.) Herald, Feb. 9, 1944.*

MARRIAGES

Lt. Arthur S. Charles (CORN., '41) 1369 Service Unit, Pittsburgh Subs. Railhead, Logan Armory, Pittsburgh, Pa., to Miss Lila J. Shiffman, June 27, 1943.

BIRTHS

To Dr. (M.S.C., '41) and Mrs. G. E. Whitmore, University of Illinois, Urbana, Ill., a son, John Thomas, Dec. 16, 1943.

To Dr. (M.S.C., '41) and Mrs. Maurice L. Weldy, Wakarusa, Ind., a daughter, Charlotte Ann, Jan. 1, 1944.

To Dr. (M.S.C. '38) and Mrs. George Fohey, Clio, Mich., a son, William James, March 1, 1944.

To Dr. (I.S.C., '39) and Mrs. John B. Woodworth, Box 81, Waynesboro, Va., a son, Douglas Clark, March 10, 1944.

To Dr. (U.P., '43) and Mrs. Edward S. Kutish, 259 Carey Ave., Wilkes-Barre, Pa., a daughter, Lois, March 24, 1944.

To Dr. (M.S.C., '40) and Mrs. L. M. Hutchings, Purdue University, West Lafayette, Ind., a son, Alan Morton, April 2, 1944.

To Dr. (O.S.U., '29) and Mrs. W. A. James, 1076 Youngstown Road, Warren, Ohio, a daughter, Carol Anne, April 4, 1944.

To Lt. (WASH., '42) and Mrs. K. D. Devine, Vet. Branch, Service Command, Unit 1907, Ft. Lewis, Wash., a son, David Andrew, April 6, 1944.

To Capt. (K.S.C., '38) and Mrs. H. H. Parrell, 1408 Belle St., San Bernardino, Calif., a son Stephen Jay, April 18, 1944.

To Dr. (U.P., '37) and Mrs. W. M. Andress, De Vries Circle, Lewes, Del., a son, Walter Millard, April 25, 1944.

To Dr. (A.P.I., '42) and Mrs. Wilford S. Bailey, Alabama Polytechnic Institute, Auburn, Ala., a son, Wilford Edward, April 29, 1944.

DEATHS

Alvin F. Baver (C.V.C., '04), 68, Kutztown, Pa., died May, 1943. He had been a member of the AVMA since 1929.

W. W. Bronson, prominent eastern Iowa veterinarian, died in an Anamosa hospital April 19, 1944. Dr. Bronson was born in Wyoming and had been a practicing veterinarian there before he came to Iowa.

Robert C. Dickson (K.C.V.C., '18), 62, Kansas City, Mo., died April 2, 1944. He was associated with the Bureau of Animal Industry at the time of his death. Dr. Dickson had been a member of the AVMA since 1924.

Charles E. Gibbs (Corn., '04), 66, Fredonia, N. Y., died April 17, 1944. He was a native New Yorker, having been born at Sherman. Dr. Gibbs was admitted to the AVMA in 1934.

Lloyd J. Goodman (K.C.V.C., '12), died June 16, 1943, at Norton, Kan. He was admitted to the AVMA in 1942.

Roy C. Guldner (St. Jos., '10), 57, Frederick, Kan., died Dec. 30, 1943. He was admitted to the AVMA in 1918.

John L. Halloran (C.V.C., '02), Staten Island, New York, died April 6, 1944. Dr. Halloran had practiced at Staten Island for the past twenty-five years. He had been a member of the AVMA since 1909.

Geo. R. Hartman (K.C.V.C., '11), 60, Chattanooga, Tenn., died March 27, 1944. Dr. Hartman had been in the meat inspection business for thirty-three years and at the time of his death was inspector-in-charge at Chattanooga, Tenn. He had been a member of the AVMA since 1918.

Harry D. Port (C.V.C., '14), 53, Cheyenne, Wyo., died April 25, 1944, of a heart attack. He was admitted to the AVMA in 1919.

Joseph T. Redmon (Ind., '09), 56, Indianapolis, Ind., died April, 1944. Dr. Redmon conducted a small animal practice in Indianapolis. He was admitted to the AVMA in 1916.

James Smellie (C.V.C., '97), 80, Eureka, Ill., pioneer rural practitioner of the upper frame, past president of the Illinois State Veterinary Medical Association and long time member of the AVMA died Jan. 8, 1944.

THE VETERINARY PROFESSION AND THE WAR

Regarding Relocations to Meet Civilian Needs

Indicating the problem that may face state veterinary committees of the Procurement and Assignment Service, although on a much smaller scale, is the report made April 23, 1944, by Dr. Frank H. Lahey, chairman of the Directing Board, in respect to relocation of physicians to help meet civilian needs. From January, 1942, to February, 1944, relocations of 2,955 physicians to new localities were effected. The relocation of these professional men from areas where their services can be spared to areas where medical service is scarce is a major responsibility of the Procurement and Assignment Service, as pointed out by Dr. Lahey.

The work has the coöperation of the U. S. Public Health Service which, under a recent law, may pay a subsistence allowance of \$250 a month for three months to a relocated physician, plus transportation expenses, provided the local community pays one-fourth of the total cost.

Since 1942, state medical chairmen have reported 510 areas as being critically short of medical personnel. Of these, needs were met in 281 communities, or 55 per cent. Relocations were effected in 135 communities and the needs of 146 were met by other means, such as inducing retired physicians to resume active practice, changes in types of practice, and "freezing" of medical personnel in civilian communities by P&AS classification as "essential." The main difficulties in the way of permanent solutions for some communities, as stated by Dr. Lahey, are to be found in such factors as the following:

- 1) To a large extent, relocations must be effected within the various states themselves because of restrictions in medical license laws that prohibit outside physicians from practicing.
- 2) There is a serious problem involved in finding qualified older physicians who are not already firmly established, and who are willing to move to other areas where their services are needed.
- 3) It is sometimes difficult to find physicians who, although otherwise qualified, are acceptable to local communities.

Another important factor, according to Dr. Lahey, in solving civilian medical-care problems is found in the fact that distribution of medical personnel for civilian purposes must be voluntary. As a result, it is sometimes impossible to persuade physicians to relocate to certain communities that are considered unattractive. Equally difficult to counteract is the movement of physicians from some rural areas where their services are needed acutely to urban areas with financially better opportunities.

Deferment of Veterinarians

State veterinary chairmen, P&A Service, who have not already done so, should see that DSS Forms 42-A (Special) are filed on all veterinary registrants under 26 years of age in essential positions. These forms, after proper certification and endorsement, should be submitted to state directors of Selective Service in the states in which individuals are registered in order that their highest skills may be used and to prevent induction for ordinary service.

Dr. Barton Appointed Executive Officer, P&A Service

Paul C. Barton, M.D., who has been serving as acting executive officer, Procurement and Assignment Service for Physicians, Dentists, and Veterinarians for the past several months, was recently appointed by the Directing Board to serve as executive officer. He replaces Commander Maxwell E. Lapham, M.C., U.S.N.R., whose serious illness several months ago forced him to relinquish his duties. Dr. Lapham, now recovered, has been ordered to active duty at the Naval Hospital, San Diego, Calif. He rendered distinguished service to the Procurement and Assignment Service and to the professions with which it deals.

Dr. Barton, formerly director of the Bureau of Investigation, American Medical Association, is well known to state chairmen, having been assistant executive officer of the P&AS prior to serving in an acting capacity.

The Directing Board also appointed Dr.